City and County of San Francisco
San Francisco City Planning Commission

Environmental Impact Report

135 Main Street Building

Draft
EE81.61

Publication Date: December 18, 1981
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Written Comments should be sent to the Environmental Review Officer, 45 Hyde Street, San Francisco, Ca. 94102

ENVIRONMENTAL IMPACT REPORT

135 MAIN STREET BUILDING

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(415) 558-4656 100 Larkin Street San Francisco, CA 94102

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I. SUMMARY

PROJECT DESCRIPTION

The proposed project is sponsored by the Daon Corporation, building developers, owners, and managers. The sponsor proposes to build a 22-story office building containing about 264,600 gross square feet. Street-level retail space and an enclosed garden and pedestrian area which would provide a link in an interior block pedestrian walk would be developed. Parking for 22 vehicles would be provided in the basement area.

The project site contains 18,900 square feet and is 137.5 feet by 137.5 feet. The building would measure 125 feet by 109 feet and would have a Floor Area Ratio of 14 to 1. The site fronts on Main Street opposite the Main street freeway off-ramp and the 33-story Pacific Gateway Building which is now under construction. New office buildings are proposed on either side of the project and are currently undergoing environmental review. An 18-story building is nearing completion at the rear of the site.

PROJECT EFFECTS

The project would require demolition of two two-story buildings which are presently on the site. The project would comply with the basic use, height, and bulk provisions of the City Planning Code and with the current moratorium on the use of floor area bonuses.

I. Summary

The project would be visible in the City skyline as seen from the east -- the Bay Bridge and Yerba Buena Island -- and from the south -- Rincon Hill and Potrero Hill. The project would not obstruct any scenic views now available to the public, but it would block some views from neighboring buildings.

The project would create more extended shadow patterns than those caused by the buildings existing on the site, but many would be coterminous with shadows cast by proposed neighboring buildings.

The project would result in demolition of approximately 30,000 gross square feet of light industrial space in which blue-collar workers are employed and add 248,000 net square feet of office space. A printing firm occupying most of the site, and employing 70 persons, is planning to move its employees three and one-half blocks from the site without regard to whether the project would be built or not. About five employees would be displaced from the remainder of the site. The project would accommodate about 1,070 jobs. About 231 San Francisco households would be generated by the project. The project would require about 270 person-years of construction labor.

The project would directly generate about 280 Muni trips during the evening peak hour and about 1,400 trips daily. Regional transit systems would have about 340 additional peak-hour trips generated directly by the project. Pedestrian traffic generated by the project would contribute to a cumulative total that would exceed the crosswalk capacities at the Mission and Main Streets intersection during the peak hour. The 22-stall garage would accommodate up to 175 short-term parkers per day of which 15 trips would occur during the peak hours. Main Street in the project block would operate at 10 to 15 percent of vehicular capacity during the peak hour.

Other project-related impacts would be generally typical of most Downtown office projects. Noise effects would occur during construction, primarily from piledriving. Project construction and operation would result in increased energy consumption, but the project would be energy efficient, exceeding minimum State standards for energy conservation by about ten percent. Geotechnic and seismic constraints that apply to the project would be resolved through implementation of engineering and design measures recommended by the project soils engineer.

CUMULATIVE EFFECTS OF DOWNTOWN DEVELOPMENT

The proposed project, together with other major downtown office buildings under construction or proposed, would add approximately 11 million gross square feet to the 60 million gross square feet of office space that now exists in the City. This development would continue a trend of regional growth in service-sector and office headquarters activities.

Traffic due to cumulative downtown development would exacerbate peak hour conditions at the Mission-Main and Mission-Beale intersections near the project. Cumulative parking demand would be greater than the available supply of spaces, eliminating the existing seven percent vacancy rate within 2,000 feet of the project. Increases in demand for public transportation services would result in a spreading of the peak-of-the-peak ridership conditions on most carriers, with increased incidents of overloading most likely to occur on Muni, Golden Gate Transit buses, and on BART transbay trains.

MAJOR MITIGATION MEASURES

Mitigation measures proposed as part of the project include the following:

- The project would provide a link in the mid-block pedestrian walkway recommended by the Department of City Planning.

- The project would remove old sidewalk elevators which obstructed pedestrian flows.

- The project would provide a three-story-high entrance court and a glass-covered rear garden area which would be landscaped and provide passive recreation for project occupants and the public.

- The project height of 24 stories would provide a transition between 30- to 43-story buildings to the north and northwest and 18-story and lower buildings to the southeast.

- The project would have upper-level setbacks and a top-floor terrace to avoid a box-like appearance.

- Housing mitigation measures, as required by the City Planning Commission and agreed to by the sponsors, would be provided at other locations.

- The project sponsor would participate proportionately in whatever legal means is adopted finally by the Board of Supervisors to contribute to transit development and improvement.

- The project would provide parking for bicycles, mopeds, and handicapped persons and preferential parking for carpools and vanpools.

- A transportation broker would be designated to develop and implement a transportation management program.

- The project would be designed to affix eyebolts to the building for the suspension of Muni overhead trolley wires.

- Holes for piles would be preaugured to reduce noise impacts.

Mitigation measures under consideration by the project sponsor include:

- Alternatives to the energy system are being analyzed to determine if greater energy efficiency could be achieved.

ALTERNATIVES

The following alternatives to the proposed project are discussed in Section VII of this report:

A. "No project", and locating the project in Oakland.

B. Provision of the full housing requirement, under current formulas and controls, on the site.

C. Provision of some residential units on the site, under current formulas and controls, while retaining the maximum amount of office space.

D. Provision of the full housing requirement on the site under regulations proposed in Guiding Downtown Development.

E. Provision of some housing on the site, while retaining the maximum amount of office space, under regulations proposed in Guiding Downtown Development.

F. Provision of maximum office space without housing under regulations proposed in Guiding Downtown Development.

II. PROJECT DESCRIPTION

A. LOCATION OF THE PROPOSED PROJECT

The proposed 22-story office building would be located on the east side of Main Street between Mission and Howard Streets. The site is in the C-3-O (Downtown Office) Use District and the 400-I Height and Bulk District and occupies Lots 12 and 13 in Assessor's Block 3717. The site is 137.5 feet by 137.5 feet and contains 18,906.25 square feet. (See Figures 1 and 2.)

The site is in an area in which three office buildings are under construction and four are in various stages of environmental review in addition to the project. The buildings under construction are the 18-story 150 Spear Street Building located at the rear of the project site, the 33-story Pacific Gateway Building located opposite the site on the west side of Main Street and the south side of Mission Street, and the 12-story Federal Reserve Bank Building located north of Mission Street between Main and Spear Streets, fronting on Market Street. Buildings being planned in the project block include the 25-story Mission-Main Building on the parcels north of the project site, the 20-story 101 Mission Street Building at the corner of Spear and Mission Streets which has been approved by the City Planning Commission, on August 27, 1981 by Resolution No. 9122/1/, and the 19-story Spear-Main Building on the vacant site south of the proposed project, all of which are in Block 3717. Another building is planned at 201 Spear Street on the southeast corner of Spear and Howard Streets.

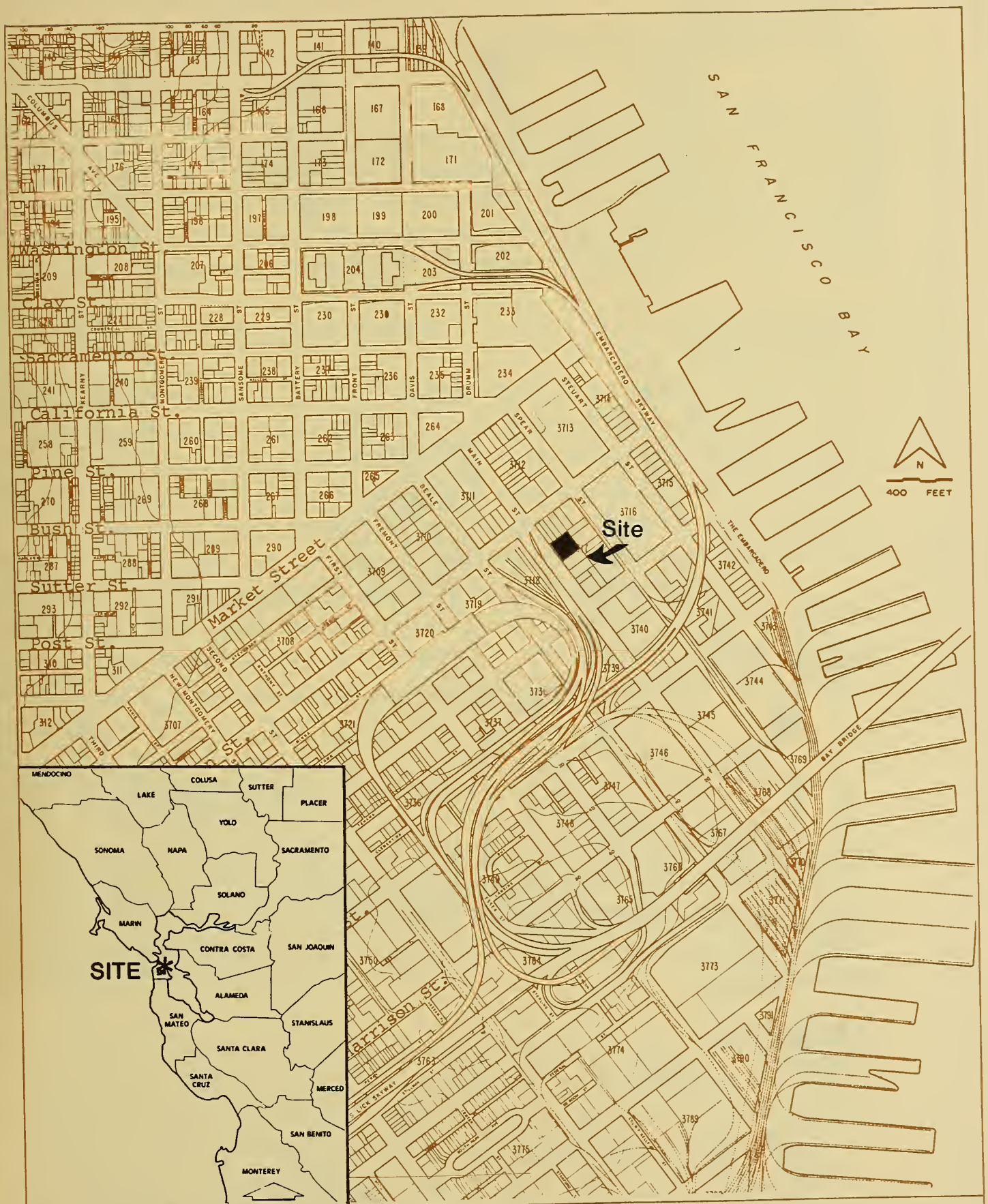


Figure 1: Project Location

Legend

Project Location

Building Key

A: One Market Plaza
B: Federal Reserve (under construction)
C: Matson Building
D: PG&E Building
E: Pacific Gateway (under construction)
F: Rincon Annex Post Office
G: Proposed 18-Story 201 Spear Building
H: Folger Building
I: 201 Main Street
J: 221 Main Street

Figure 2: Project Site and Vicinity

The project site contains two two-story buildings. One is a brick building at 115 Main Street, formerly used as a warehouse. The second, at 135 Main Street, is a concrete structure occupied by a printing processor whose employees will be relocated three and one-half blocks from the site. (See Figure 3.) These buildings would be removed by the project.

B. OBJECTIVES OF THE PROJECT SPONSOR

The proposed project is sponsored by Daon Corporation, building developers, owners, and managers, whose objective is to obtain a return on capital invested in constructing and renting space in an office building in downtown San Francisco. The project is proposed at this time to help meet the market demand for office space in downtown San Francisco. It is the intent of the sponsors to comply with the provisions of the City Planning Code in effect at the date of filing an amended site permit application for the project, on October 23, 1981, which include a prohibition on the use of bonuses described in Section 126 of the Code./2/ The project architect is the firm of Robinson Mills and Williams, San Francisco. Robert P. Teubner, AIA, is their project manager.

C. SITE AND BUILDING PLAN

The proposed building would be about 340 feet high and contain 22 stories. The building would measure 125 feet along Main Street and would be 109 feet deep. The building would contain about 264,600 gross square feet of floor area, of which 3,000 to 4,000 would be retail, and would have a Floor Area Ratio of 14 to 1./3/

The building would be flush with the property line along the Main Street frontage. It would be set back 12.5 feet from the southerly property line in order to provide an air space between it and the 19-story Spear-Main Building proposed on the adjoining parcel which would be set back ten feet from the property line. The rear facade of the building would be 28.5 feet from the easterly property line, providing a total air space of 33.5 feet between it and the 150 Spear Street Building which is under construction. (See Figure 4.)

SOURCE: Environmental Science Associates, Inc.

Figure 3: View of the Project Site

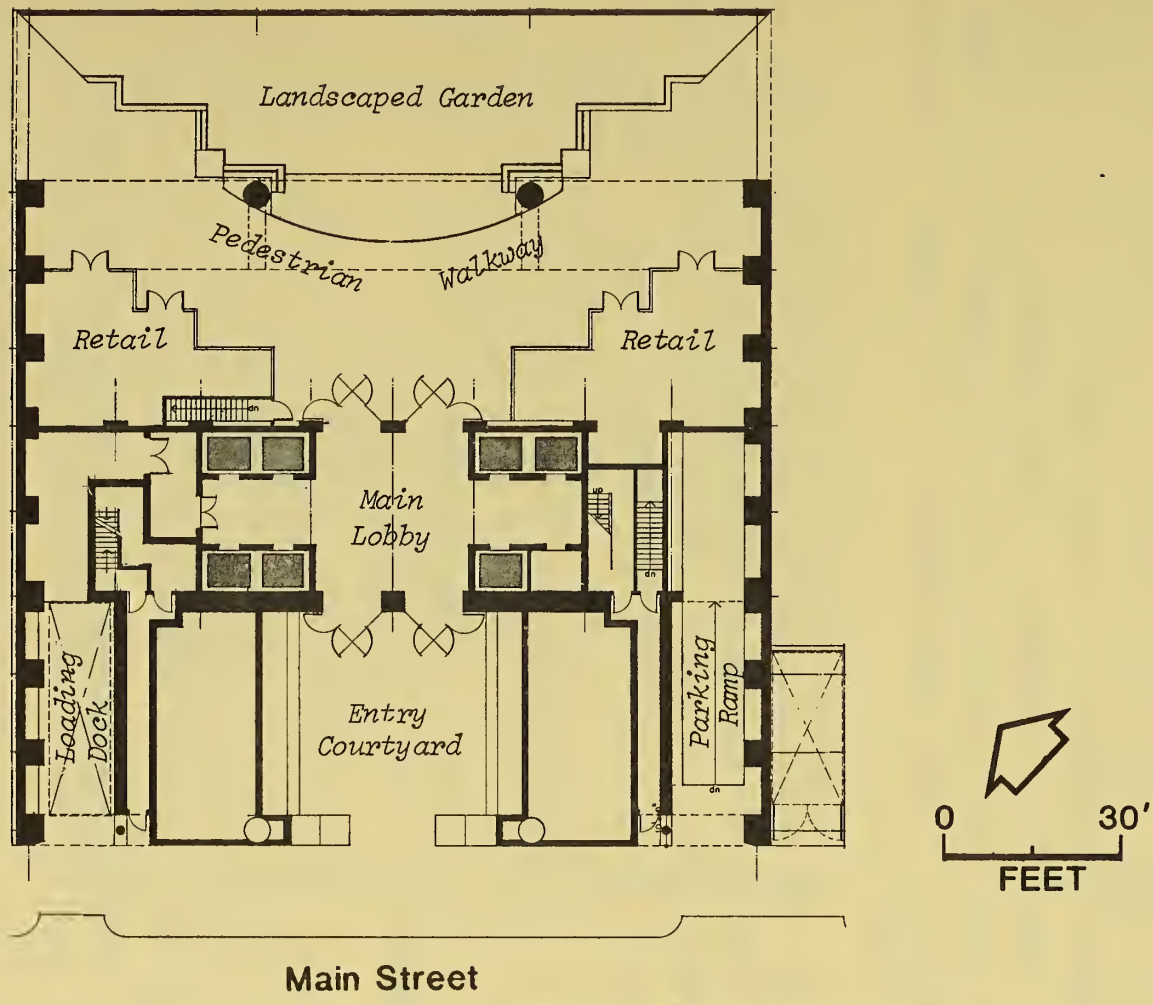


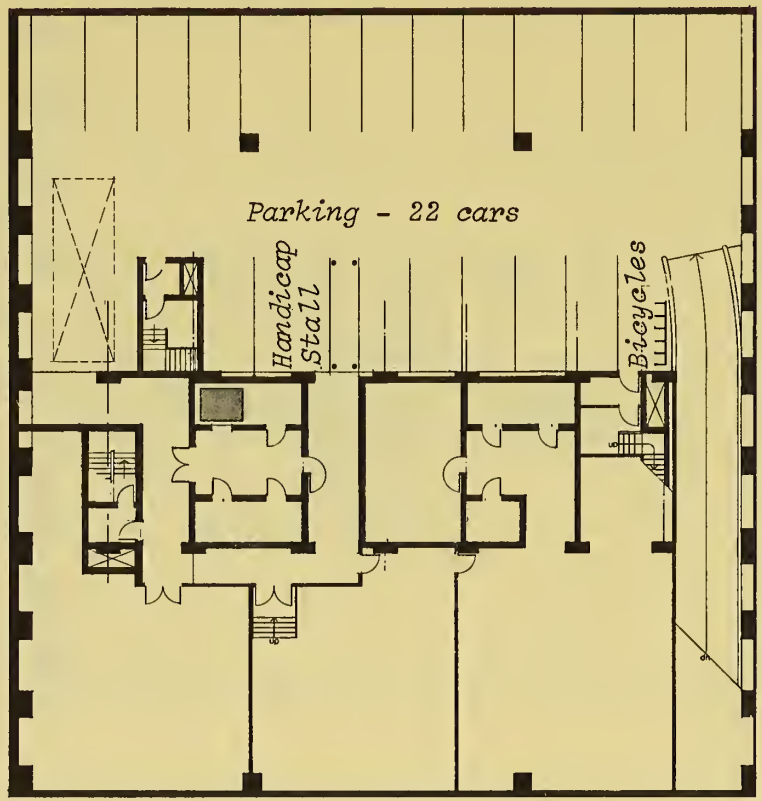
Figure 4: Ground Floor Plan

The Main Street base of the building would consist of a covered three-story entrance courtyard with landscaped areas sloping upward on either side of the entry. Creeping fig or a similar vine would partially cover the sides of the walls on the three enclosed sides of the courtyard up to the top of the third story. The building would have a curtain wall of energy-efficient tinted green glass in front and in back with floor-to-ceiling windows. Spandrels between floors on the Main Street frontage would have a strip of copper or similar ornamental metal embedded in precast concrete panels. The metal would develop a distinctive blue-green patina through weathering. The rounded roof of the mechanical penthouse above the 22nd floor also would be covered with an ornamental metal.

On the right side of the base facade a ramp with a 13 percent slope would be provided leading to 22 parking spaces in the basement, including one stall for handicapped drivers and a loading area for vans near the freight elevator. Six spaces for bicycles or mopeds would also be provided. (See Figure 5.) On the left side of the Main Street base facade there would be an entrance to an enclosed 35-foot-deep loading dock which would have direct access to a freight elevator. On the south side of the building an unenclosed loading space 25 feet deep would be located. The remainder of the sideyard space at the rear of the loading dock would be landscaped.

The pedestrian entrance from the courtyard would open to the lobby, which would have two elevator cores serving the lower or upper floors, retail space, and a glass-covered garden at the rear of the site which would be visually open to the sky for a depth of 28.5 feet. The area would be incorporated into a midblock pedestrian way traversing the properties to the south and north of the site, which are now proposed for new development, and would provide a connecting link. Provision of a north-south pedestrian way in this block was proposed and requested by the Department of City Planning.

The second floor, overlooking the entry garden and the rear garden, would be used for offices. The third floor would be the mechanical floor. The main body of the building would contain 19 levels of office space. (See Figures 6 and 7).



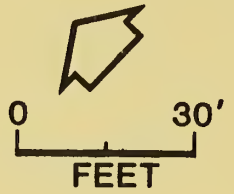
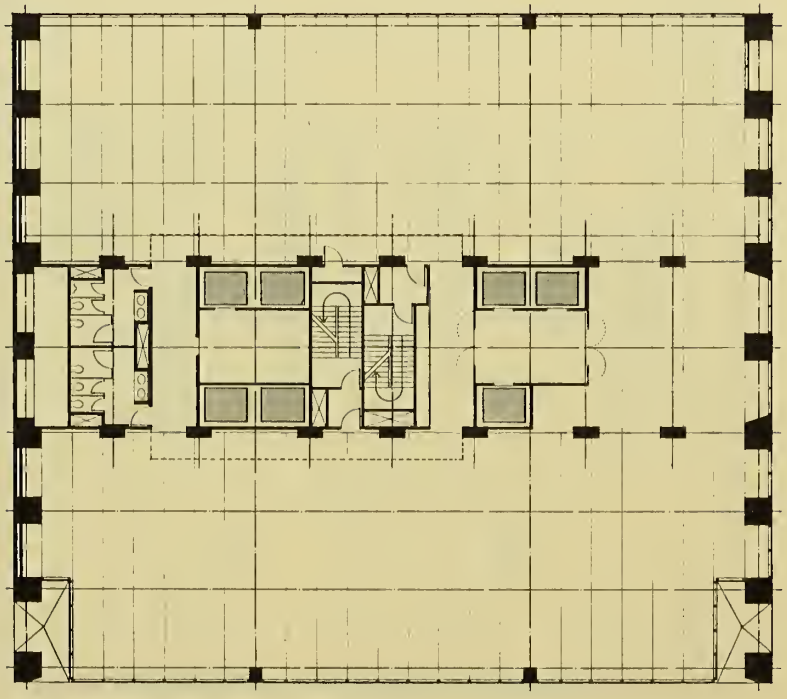


Figure 5: Parking Floor Plan



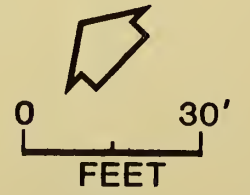
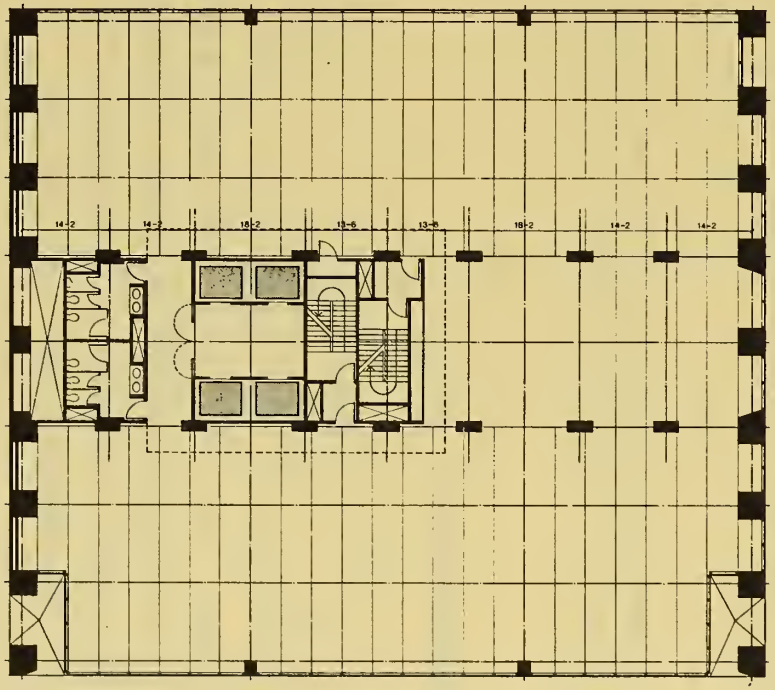


Figure 6: Typical Low Rise Floor Plan



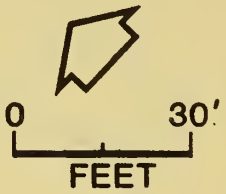


Figure 7: Typical High Rise Floor Plan

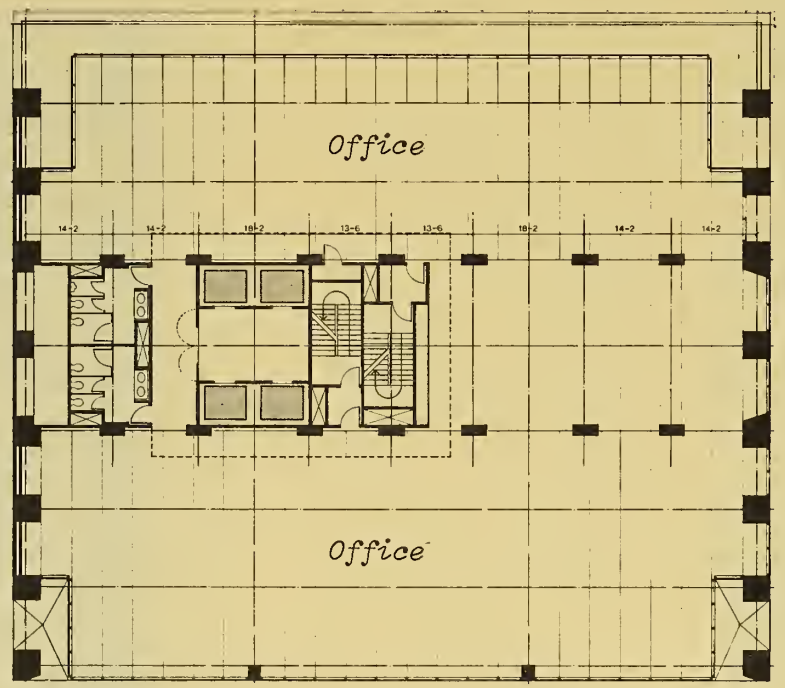
The building would have side windows on the south side facing the proposed Spear-Main Building. The tiers of side windows nearest Main Street and nearest the rear facade would have tinted glass to provide a design accent. The top office floor would have corner terraces on the east side of the building and would be set back from the wall of the floors below (see Figure 8). A sloping wall would extend from this floor to the mechanical penthouse. This would form a distinctive silhouette for the building when seen from the Bay Bridge, the Bay, or nearby buildings (see Figure 9, page 18). The north wall of the building would be one foot from the property line adjoining the proposed 25-story, 360-feet high, Mission-Main Building. It would contain no windows except next to the Main Street corner of the building where a setback would be matched by the Mission-Main Building as proposed (see Figure 10, page 19).

No prime tenants have been identified for the new office space. It is anticipated that the building would attract professional and institutional users.

D. PROJECT SCHEDULE AND COST

Environmental review and detailed project design are expected to be completed by the spring of 1982. Following permit approvals, demolition, site clearance, and excavation are expected to require 12 weeks, foundation preparation 19 weeks, steel erection 20 to 25 weeks, exterior finishing 30 weeks, and interior finishing, including electrical and mechanical work, two weeks per floor. Initial occupancy is expected in early 1984.

Total replacement costs, in 1981 dollars, are estimated to be $50,000,000. This cost includes indirect costs such as interest, taxes, financing, leasing, management, fees for architects, engineers and others, land costs, and tenant improvements.



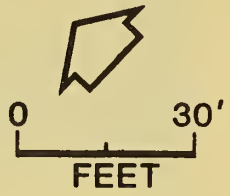


Figure 8: 22nd Floor Plan

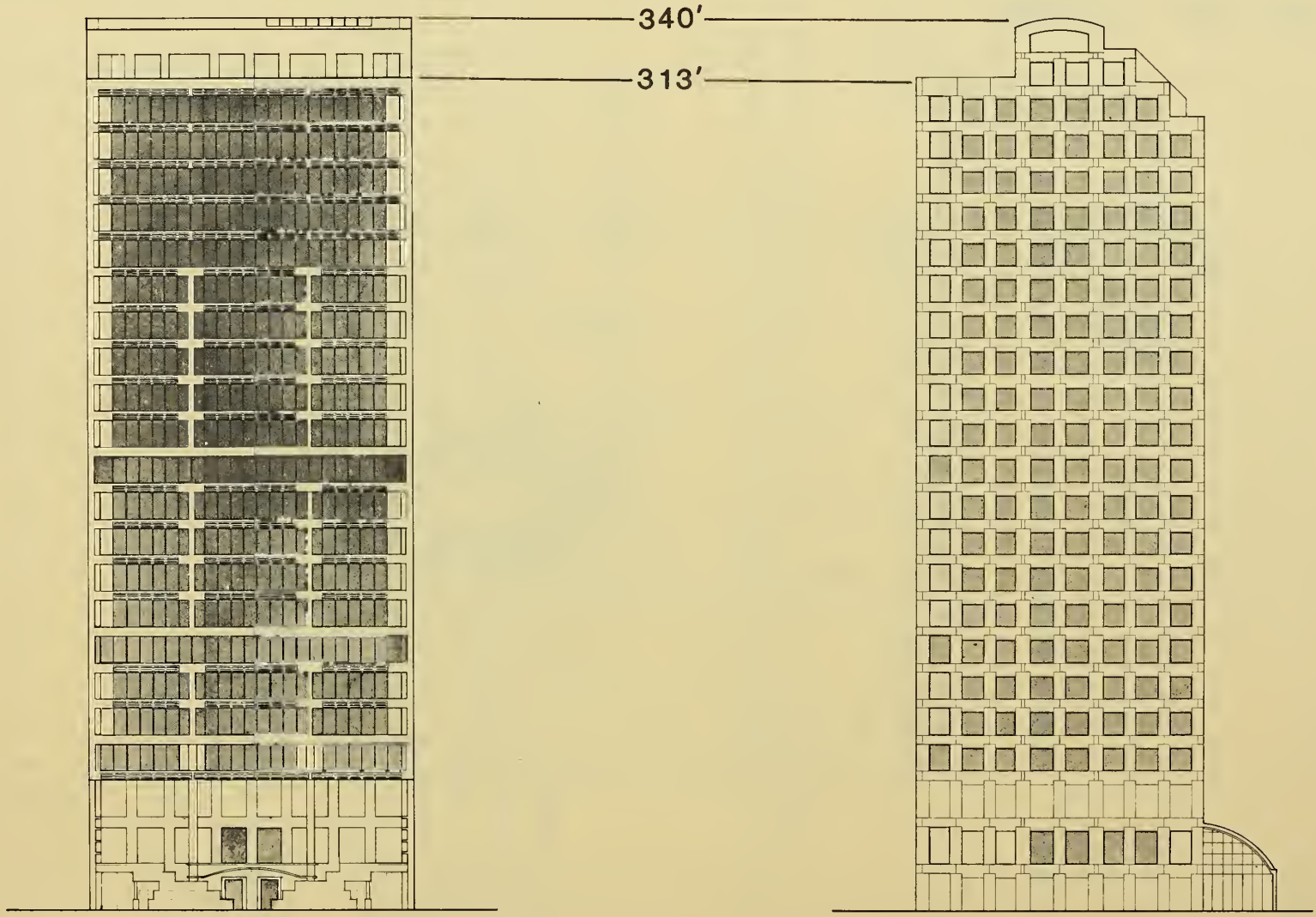


Figure 9: West and South Elevations

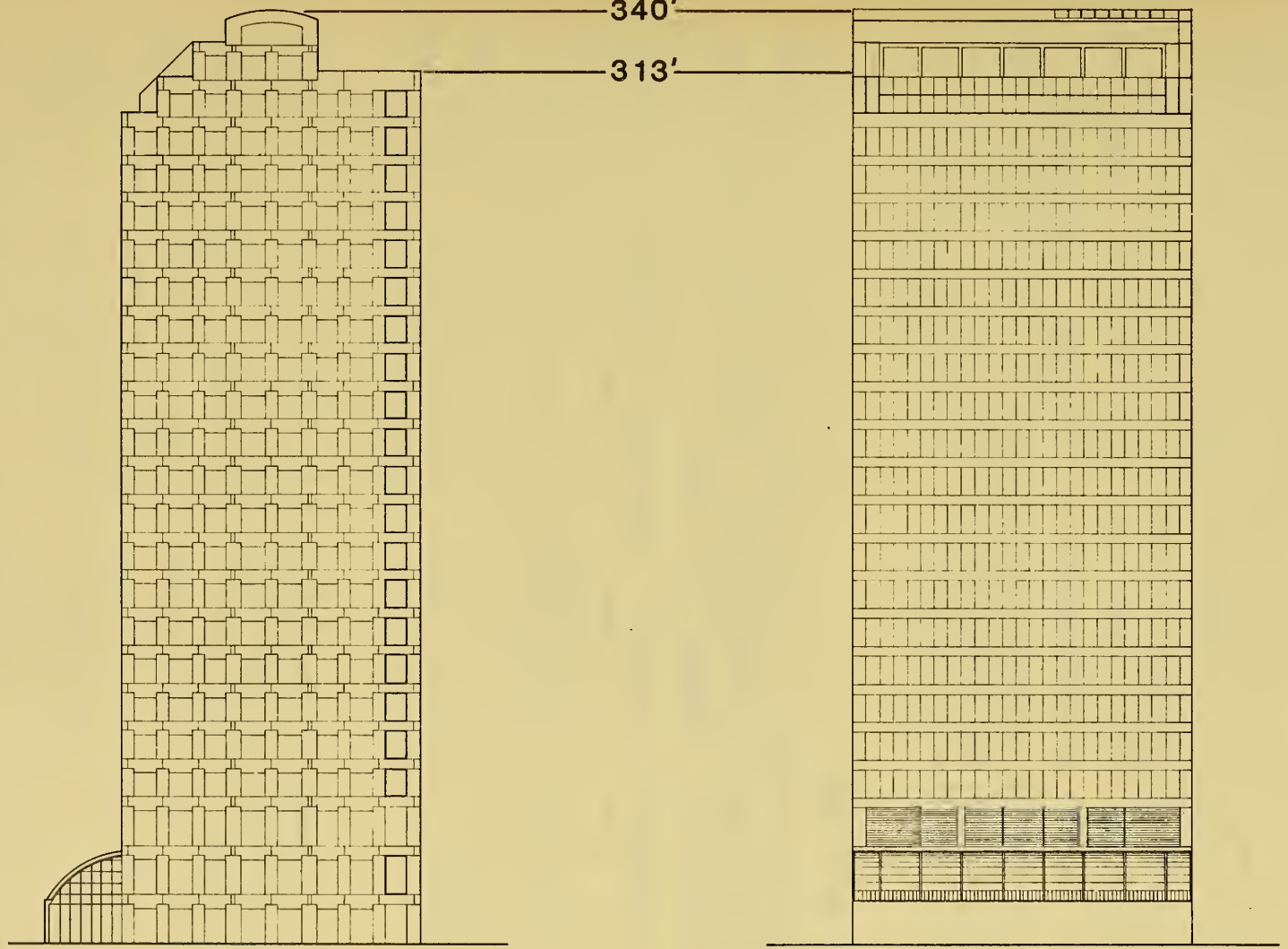


Figure 10: North and East Elevations

The project complies with the provisions of the City Planning Code currently in effect and therefore requires no conditional use authorization and no variances to the Planning Code. The project would be subject to review by the City Planning Commission in accordance with its Resolution 8474/4/ requiring its discretionary review of all projects in the Downtown area. Following certification of this EIR as adequate, accurate, and objective by the City Planning Commission, the project sponsor would obtain a demolition permit from the Central Permit Bureau of the Department of Public Works, followed by a building permit or permits administratively approved for compliance with fire, electrical, building, and other pertinent City codes, and with conditions established by the City Planning Commission in its discretionary review.

NOTES - Project Description

/1/ The 101 Mission Building was under review when the analyses were made for this report. Therefore, it is included in the category of projects under review rather than projects under construction in references to the two categories of projects used throughout this report.

/2/ An interim prohibition of the use of such bonuses was enacted by the San Francisco Board of Supervisors by Ordinance No. 240-80, effective July 1, 1980.

/3/ Floor Area Ratio (F.A.R.) is the ratio of floor area to lot area. The permitted F.A.R. in the C-3-O district is 14:1.

/4/ January 17, 1980.

III. ENVIRONMENTAL SETTING

A. LAND USE AND ZONING

The project site is in an area south of Market Street which has been undergoing a transition since the early 1970s from small-scale, low-rise commercial and service buildings and warehouses to high-rise and medium-rise office buildings. This recent trend, in response to office demand, has resulted in an extension of the Financial District southward from Market Street to Howard and Folsom Streets. Assessor's Block 3717, in which the project site is located, is undergoing such a transition with an eight-story, 109-feet-high, and a 13-story, 160-feet-high office building completed on Howard Street, an 18-story, 240-feet-high building under construction at 150 Spear Street, and four buildings, including the project, in various phases of planning and environmental review.

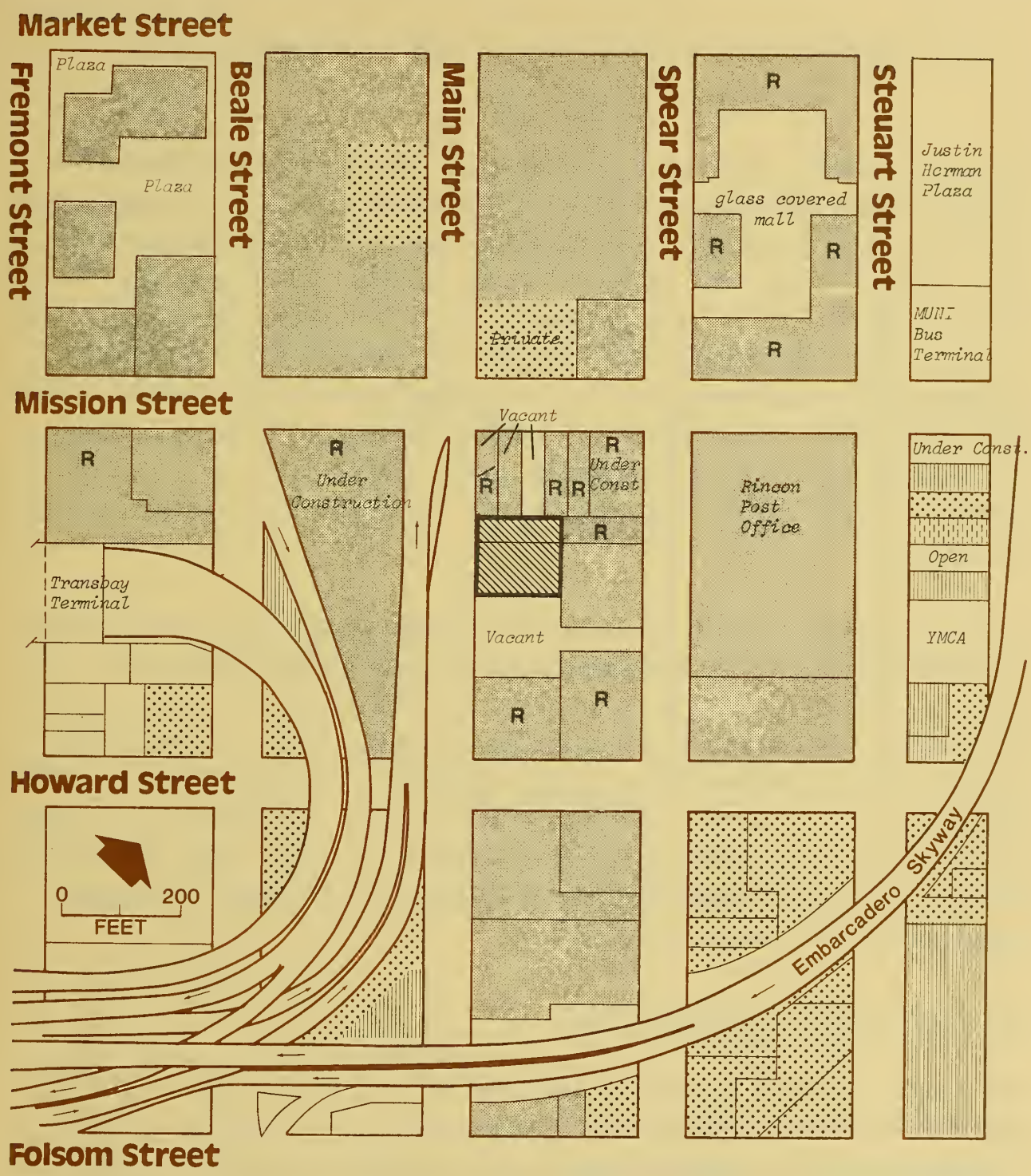
The project site is occupied by a two-story brick warehouse at 115 Main Street and a two-story concrete structure at 135 Main Street which is occupied by a printing processor. The building at 115 Main street is vacant on the ground level and is occupied by a picture frame warehouse above. Bordering the site to the north and fronting on Mission Street are a row of two-story structures. A restaurant occupies a brick building at 199 Mission Street at the corner of Main Street. A vacant concrete building formerly used by a travel agency is located at 151 Mission Street. A vacant lot separates the vacant building from a liquor store which occupies a brick structure at 131 Mission Street. Next to the liquor store is a two-story building occupied

by a restaurant and, until recently, a ski shop. The occupants have been given lease termination notices; some have moved to other locations in the City and one has moved to San Rafael. The proposed 25-story, 360-feet-high Mission-Main Building (81.183E), if approved, would replace the structures housing these uses.

Northeast of the site at 101 Mission Street, at the corner of Mission and Spear Streets, is the site of the proposed 20-story, 273-feet-high 101 Mission Street Building (EE 79.236) which was approved by the City Planning Commission on August 27, 1981, by Resolution No. 9122. The four-story brick building previously on the site has been demolished. One parcel to the rear of the project site is covered by a four-story brick building with a restaurant and florist at the street level and office uses on the upper floors. This building has been rehabilitated and is the only old building on the block not proposed for replacement. South of the project site is a vacant parcel proposed as the site for the 19-story, 240-feet-high Spear-Main office building (EE 80.349).

Opposite the site is the Main Street freeway off-ramp and the 33-story Pacific Gateway Building which is under construction. North of the project block is the Federal Reserve Bank, under construction, and the three office buildings of One Market Plaza and the three buildings of the P.G.&E. complex are on either side of the Federal Reserve Bank. Immediately south of the project block are three office buildings of which two are on Main Street (201 and 221 Main Street). An office building is planned at 201 Spear Street on the southeast corner of Spear and Howard Streets where a parking lot is located. See Figure 2, page 8, and Figure 11.

The Rincon Post Office Annex occupies the entire block east of the project block, bounded by Spear, Mission, Steuart, and Howard Streets. The southern half of that block is devoted to post office vehicle loading and parking, including long-distance over-the-road trucks. The plan for the Rincon Point-South Beach Redevelopment Area, which includes this block, recommends a mixed office and housing use of this block when the postal service activities



Legend

- Project Location
- / R Office with Retail on Ground Floor
- Retail
- Parking (Public)
- Restaurant/Bar

Figure 11:

Existing Land Use in the Vicinity of the Site

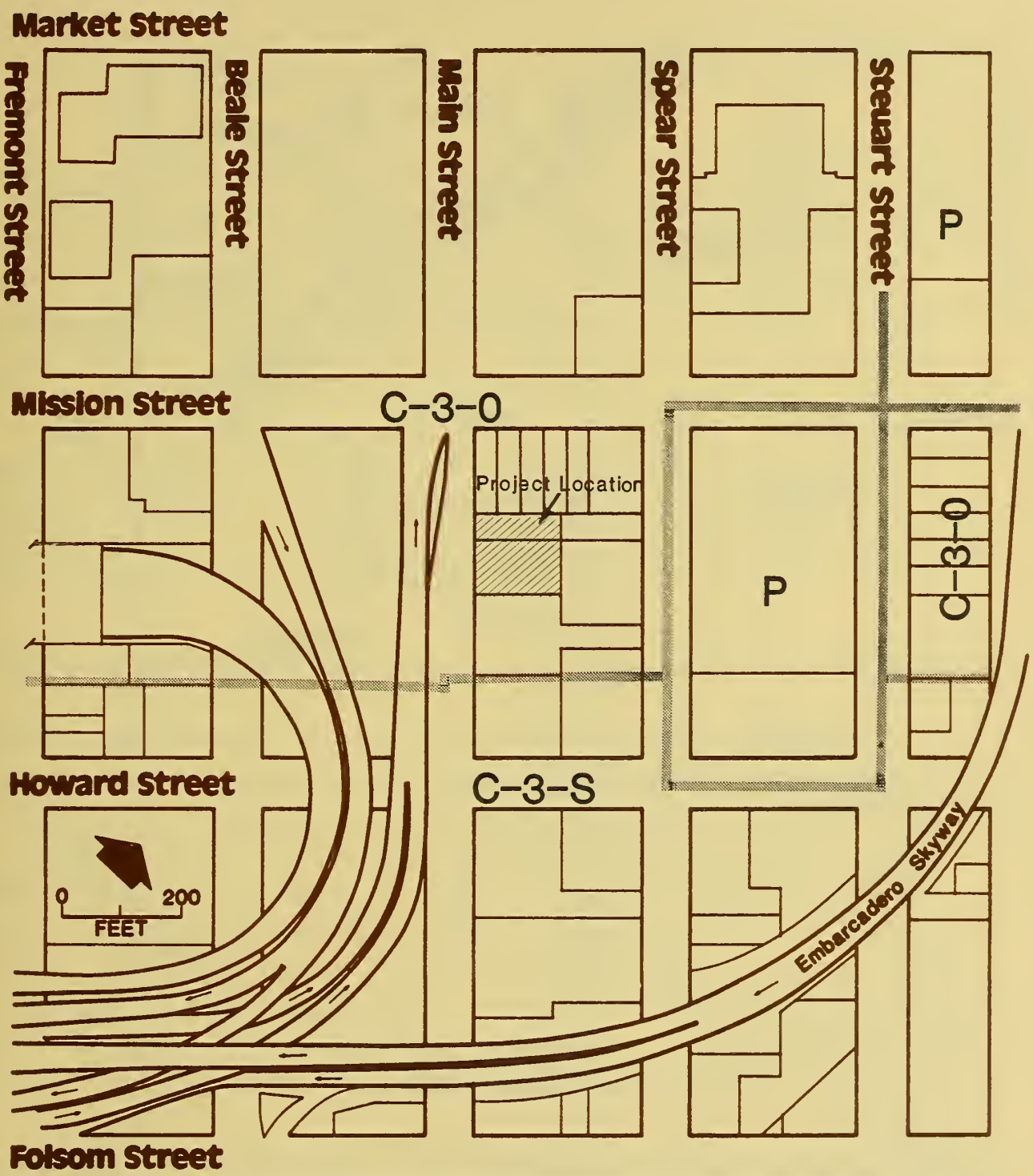
are moved to the India Basin Industrial Park. The block east of Steuart Street between The Embarcadero, Mission, and Howard Streets -- the East Street Row -- contains smaller and lower buildings ranging in height from three to nine stories. Among these is the Audiffred Building, a designated City landmark which is being restored after a fire, and The Embarcadero YMCA. This block is not in the Redevelopment Area; the Northeastern Waterfront Plan, adopted as a part of the Master Plan by the City Planning Commission by Resolutions 8481, 8596, and 8781, recommends retention of existing buildings in the block and infilling with buildings of a similar scale for office and housing use above ground level retail uses. The block is limited to a height of 84 feet.

The project site is in the C-3-O (Commercial-Downtown Office) zoning district as defined in Section 210.3 of the City Planning Code (see Figure 12).

Buildings in the C-3-O zoning district are allowed a basic Floor Area Ratio (F.A.R.) of 14:1, which for this project would be 264,688 square feet. The project site is in the 400-I Height and Bulk District (see Figure 13, page 26) in which the maximum permitted building height is 400 feet. Above a height of 150 feet the maximum permitted building length is 170 feet and the maximum permitted diagonal dimension is 200 feet.

B. VISUAL QUALITY AND URBAN DESIGN

The visual setting of the site is dominated in all directions by new office buildings and heavy construction activities, and opposite the site by vehicular traffic on the Bay Bridge-Bayshore Freeway Main Street off-ramp. The two-story buildings on the site reflect the small scale of pre-1970 buildings once common in the area. One building, a plain concrete structure, has been updated by the use of awnings; the other, a red-brick building, shows disuse, with the ground floor boarded up and inaccessible (see Figure 3, page 10). A similar building of the same height is on the Main and Mission corner parcel, extending from the site to Mission Street. The parcel south of the site was used as a construction staging area for the 150 Spear Street Building and is now a temporary commercial parking lot. The sidewalk paving

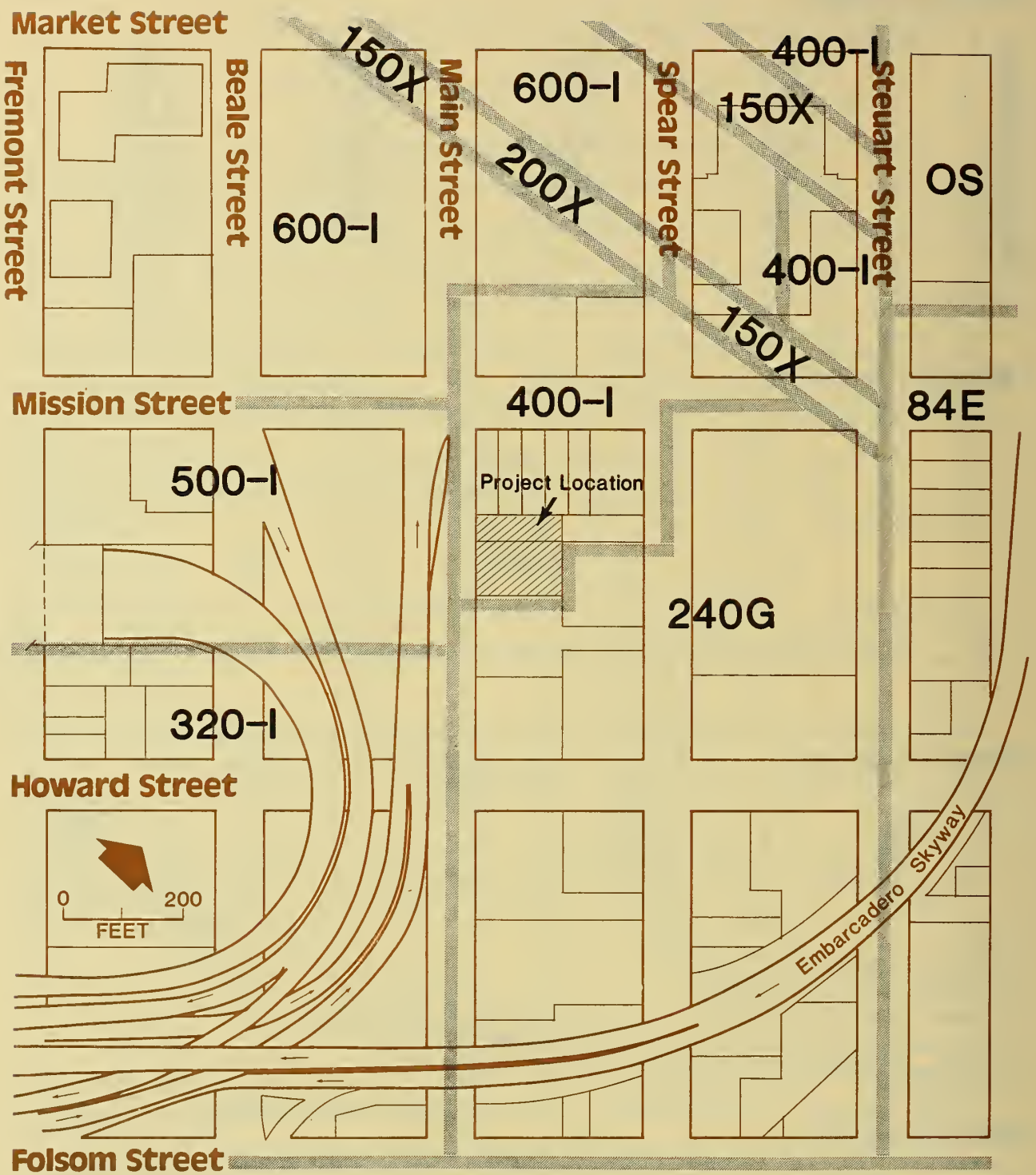


Legend

C-3-O	Downtown Office District
C-3-S	Downtown Service District
P	Public Use District

Figure 12:

Planning Code Land Use Districts on the Site and Vicinity



Legend

HEIGHT AND BULK DISTRICTS	HEIGHT LIMIT	HEIGHT ABOVE WHICH MAXIMUM DIMENSIONS APPLY	MAXIMUM BUILDING LENGTH	MAXIMUM DIAGONAL DIMENSION
600-I	600	150'	170'	200'
500-I	500	150'	170'	200'
400-I	400	150'	170'	200'
320-I	320	150'	170'	200'
240-G	240	80'	170'	200'
200-X	200	Bulk limits not applicable.		
150-X	150	Bulk limits not applicable.		
84-E	84	65'	110'	140'
OS	Conformity with objectives, principles, and policies of the Master Plan.			

Figure 13:

Planning Code Height and Bulk Districts on the Site and Vicinity

on Main Street is variable in type of material and in quality, the poorest being at old buildings and construction sites. Sidewalk elevators which once served basement areas are no longer in use. Unmarked diagonal parking at the site tends to spill onto the sidewalk area. Landscaping at the freeway off-ramp opposite the site consists of weeds next to a concrete wall and a cyclone fence. In general, pedestrian amenities are minimal at the project site and in the vicinity.

Because the buildings on the site are two stories in height they cannot be seen from a distance. They are most visible from the freeway off-ramp and comprise a part of the intown view first encountered by Bay Bridge and freeway users entering the City at that point.

SUNLIGHT AND SHADOW PATTERNS

Existing shadow patterns within and surrounding the project block are dominated by the Borel Building at Spear and Howard Streets, the 150 Spear Street Office Building, and the Kemper Building at Howard and Main Streets. At present, portions of Main Street and Mission Street are shaded from early morning to mid-morning during all seasons of the year. From mid-morning to mid-afternoon portions of Mission street and Spear Street are shaded at all seasons of the year. From mid-afternoon to evening, portions of Spear Street are shaded at all seasons of the year. Portions of Steuart Street are also shaded from mid-afternoon to evening during the autumn, winter, and spring months. (See Figures 20, 22, and 24, pages 63, 65, and 68.)

The setback area on the north side of Mission street between Steuart and Spear Streets at the One Market Plaza office complex is partially shaded by the 150 Spear Street Office Building during the mid-winter from late morning to early afternoon.

C. HISTORICAL AND CULTURAL RESOURCES

The two buildings on the site were not rated in the citywide architectural survey conducted by the Department of City Planning in 1976, nor were they included in the survey conducted by the Foundation for San Francisco's Architectural Heritage. They are not included on the Department of City Planning list of Architectural and/or Historically Significant Buildings adopted by the City Planning Commission on May 29, 1980.

D. EMPLOYMENT, HOUSING, AND FISCAL FACTORS

EMPLOYMENT AND THE OFFICE SPACE MARKET

The project site provides employment for approximately 75 persons. Of these, 70 are employed by the printing company at 135 Main Street and approximately five are employed by the picture framing business at 115 Main Street. Most of these jobs are in the service, or "blue collar," category.

San Francisco is the major office center in the Bay Area with approximately 57 million gross square feet of office space (see Table 1). During the 1970s, space in downtown office buildings was added to at a rate of about 1.5 million square feet per year. Office buildings with a total space of approximately 29 million square feet were constructed between 1960 and 1981. An additional 7.8 million square feet of office space would be added if all the buildings approved in 1981 and/or under construction were completed. An additional 9.3 million square feet of office space is under review or proposed.

The largest employment growth in the Bay Area from 1970 to 1978 occurred in the office sector, which accounted for over 60 percent of the increase in the total regional work force. A total of 1.2 million people in 1978 held office jobs in the Bay Area, with nearly 70 percent employed by firms serving the local population. Over 55 percent of the 280,000 office workers employed in San Francisco worked for the national or regional headquarters of firms that serve a wider geographical area.

TABLE 1: MAJOR OFFICE BUILDING CONSTRUCTION AND CONVERSION IN SAN FRANCISCO AS OF NOVEMBER 1, 1981, IN GROSS SQUARE FEET

Year	Total Gross Sq. Ft. Completed	5-Year Total	5-Year Annual Average	Cumulative Total of All Office Buildings**	Cumulative Total of All Downtown Office Buildings***
Pre-1960				28,145,000	24,175,000
1960	1,183,000				
1961	270,000				
1962	--				
1963	--				
1964	1,413,000				
		2,866,000	573,200		
1960-1964		(2,580,000)*	(516,000)*	30,725,000	26,754,000
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
		8,379,000	1,675,800		
1965-1969		(7,541,000)*	(1,592,000)*	38,265,000	34,295,000
1970	1,853,000				
1971	--				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
		8,615,000	1,723,000		
1970-1974		(7,753,000)*	(1,550,000)*	46,019,000	42,048,000
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	--				
1979	2,532,000				
		8,157,000	1,631,400		
1975-1979		(7,341,000)*	(1,468,000)*	53,360,000	49,389,000
1980	1,284,000				
1981	3,138,000			57,340,000	53,369,000
Under Construction					
82/84	5,600,000	10,022,000	2,004,000		
1980-1984		(9,020,000)*	(1,804,000)*	62,380,000	58,409,000
Approved Projects	3,113,000			65,182,000	61,211,000

Source: Department of City Planning records; Lu Blazej.

*Net, which equals 90% of gross. Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.

**Source: San Francisco Downtown Zoning Study, Working Paper No. 1, January 1966, Appendix Table 1, Part 1. For pre-1965, data includes the area bounded by Vallejo, Franklin, Central Skyway, Bryant and The Embarcadero. Also includes one-third of retail-office mixed use. For post-1964, data includes the entire city.

***Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the cited January 1966 report. For post-1964, the entire area east of Franklin Street is included.

In 1981, annual rents in the newer downtown office buildings range from about $30 to $40 per square foot. New office space that will go on the market in 1983 and 1984 is expected to command annual rents of between $35 and $45 per square foot. The 1981 vacancy rate in downtown office buildings is estimated to be about four-tenths of one percent./1/ Low vacancy rates coupled with rapidly rising rents suggest that the supply of new office space in San Francisco has not kept pace with demand.

The shortage of office space in San Francisco may have caused some potential users of San Francisco office space to locate elsewhere in the Bay Area. In addition, cheaper space in outlying areas is attracting companies that do not need a San Francisco location or that can shift support functions out of the City.

THE HOUSING MARKET

A description of regional and San Francisco housing characteristics is included in the Five Fremont Center Final EIR (EE.80.268, Certification Date March 12, 1981), pp. 37-44. This report is available for public review at the Office of Environmental Review, 45 Hyde St., Room 319, and is hereby incorporated by reference into this EIR pursuant to Section 15149 of the California Environmental Quality Act (CEQA) guidelines. Information on the housing stock includes amount, growth factors, vacancy rates and purchase and rental costs. Both regional and San Francisco housing stock are characterized by low growth, low vacancy rates and high purchase and rental costs in relation to typical wages paid. These factors combined have tended to constrict the supply and affordability of housing in San Francisco.

FISCAL FACTORS

The project site consists of two parcels in Assessor's Block 3717. The assessed value of these properties in fiscal year 1980-1981 was $145,292. At the 1980-81 property tax rate of $4.92 per $100 of assessed valuation, the property yielded about $7,200 in property tax revenues,/2/ distributed as shown in Table 2.

TABLE 2: DISTRIBUTION OF PROPERTY TAX REVENUES FROM THE PROJECT SITE IN 1980-81*

Agency	1980-81 Tax Rate (Dollars per $100 of Assessed Value)	Percent of Total	Revenues
City and County of San Francisco	$4.162099	84.60	$5,090
S.F. Unified School District and S.F. Community College District	0.401258	8.15	587
Bay Area Air Quality Management District	0.008342	.17	12
Bay Area Rapid Transit District	0.348301	7.08	510
TOTAL	$4.92	100.00	$7,199

*Based on Assessed Valuation of $146,292 and the 1980-81 composite tax rate of $4.92 per $100 of assessed valuation.

SOURCE: San Francisco Tax Collector's Office

Average annual earnings of the 75 employees at the site in early 1981 are estimated to have been $25,000./3/ At the 1980-81 payroll rate of 1.5 percent of total earnings, the site is estimated to generate about $28,000 in payroll taxes to the City.

The total general fund revenues derived by the City and County of San Francisco from the sales tax, payroll tax, and utility users' tax were about $40,000 from the site in 1980-81.

The City incurs costs in providing services to the existing buildings and their occupants. Police, fire, and general government expenditures are supported primarily by the General Fund. Most street maintenance, street improvement, and traffic control costs are supported by other revenue sources such as fees, fines, and federal and state aid.

NOTES - Employment, Housing, and Fiscal Factors

/1/ Joseph W. Cline, Office Leasing Manager, Coldwell Banker, telephone communication, November 9, 1981.

/2/ John Dilg, San Francisco Tax Collector's Office, telephone communication, July 23, 1981.

/3/ Based on prevailing union scale at JPP Graphic Arts Center, 135 Main Street, Frankland L. Cutshall, telephone communication, November 5, 1981.

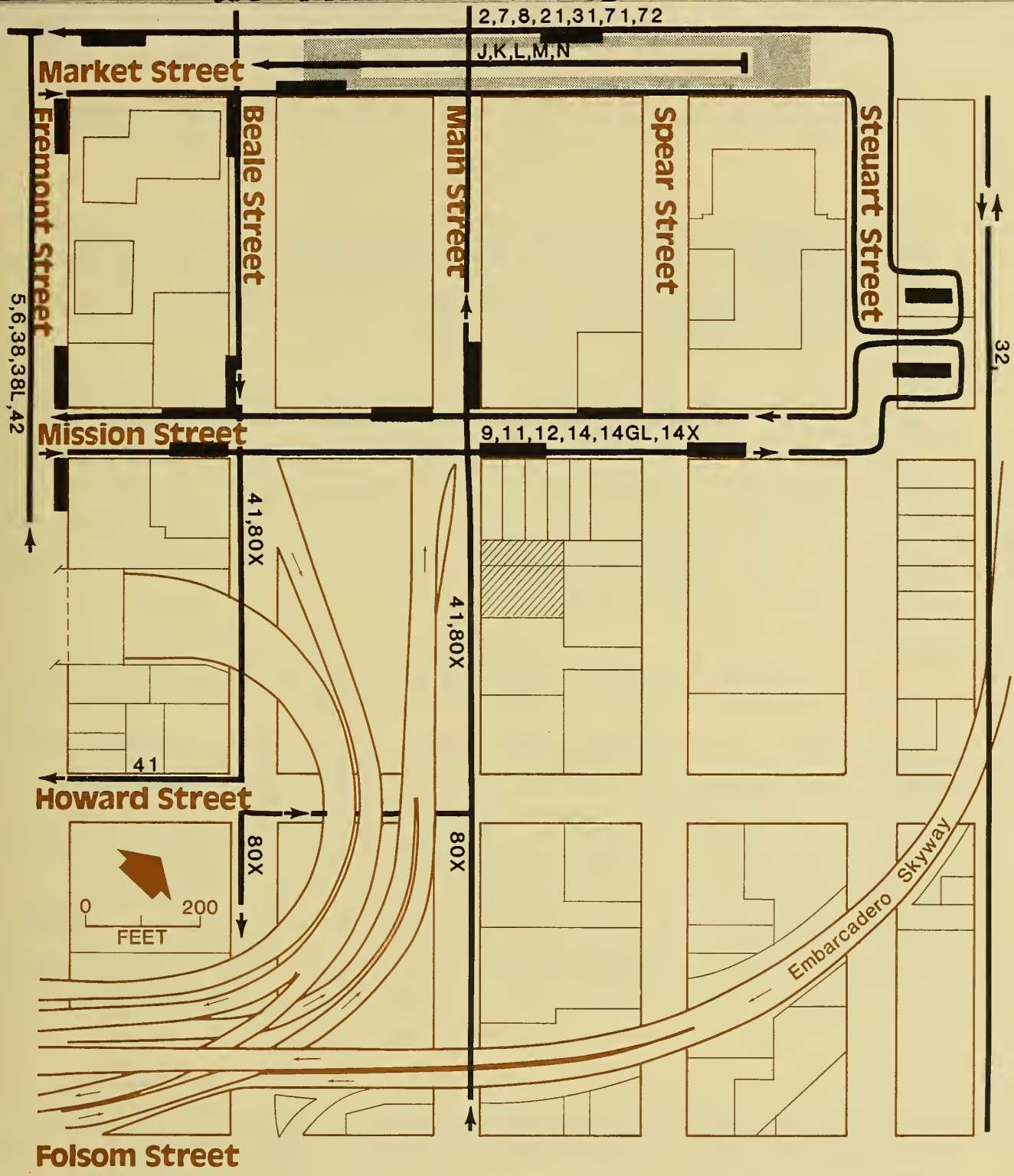
E. TRANSPORTATION

TRANSIT

The project site is served by San Francisco Municipal Railway (Muni) electric trolley and motor coach lines, and by light rail vehicle lines which serve the Embarcadero Station of the Muni Metro system in the Market Street subway one block north of the project site. Of the 75 Muni routes, 40 lines serve the area within 2,000 feet of the site. Routes of Muni lines and the location of the subway station in the more immediate project vicinity are shown in Figure 14.

Regional service is provided to and from the East Bay by the Bay Area Rapid Transit District (BART) from the Embarcadero Station, and by Alameda-Contra Costa (A-C) Transit District motor coaches from the Transbay Transit Terminal located at Mission and First Streets about 700 feet west of the project site. Peninsula service is provided by the Southern Pacific Transportation Company (SP) from a train terminal at Fourth and Townsend Streets; and by the San Mateo County Transit District (SamTrans) which has bus routes and stops along various streets in the area, including Mission Street, as well as transfer connections at the Daly City BART station.

The Golden Gate Bridge, Highway and Transportation District (Golden Gate Transit) provides peak-period bus service to and from Marin and Sonoma counties from a.m. stops on Battery Street and First Street near Market Street, and p.m. stops on Fremont Street, two blocks west of the project, and on Pine and Sansome Streets, three blocks northwest of the site. It also



Legend

Project Location

Embarcadero Subway Station

Marked Bus Stop

Figure 14:

MUNI Routes in the Project Vicinity

provides all-day service from the Transbay Transit Terminal, and from stops along Howard and Folsom Streets. Golden Gate Transit provides ferry service to terminals in Larkspur and Sausalito from the Ferry Building, and Harbor Carriers, Inc. provides service to Tiburon.

Golden Gate Transit also operates a van pooling program to North Bay areas not served by existing motor coach routes. The RIDES car pooling program, operated under the auspices of a nonprofit, publicly funded corporation, provides consulting and matching services to help establish Bay Area van and car pools. Also, independently owned and operated jitneys operate on Mission Street during peak traffic hours.

Muni has established a maximum load factor by type of vehicle which allows standees, and which is used as a basis for its scheduling of peak-hour trips on each route. The maximum passenger load under the standards ranges from 144 percent to 220 percent of seated capacity. For most motor coaches, for example, the maximum load factor is 150 percent of the seated capacity, or half as many standing passengers as seated passengers. Loadings in excess of the maximum standards increase passenger loading times, adversely affect schedule adherence, and provide a low level of passenger comfort. Some Muni lines serving the site area operate with outbound passenger loading in excess of the standard maximum load factor. On these congested lines many vehicles leave the Downtown area with little or no available standing room./1/

In addition to Muni, SamTrans and BART exceed their seated capacities during peak hours but operate at less than 100 percent of total capacity. The other transit agencies are operating during their peak hours at less than 100 percent of their seated capacity. Although the other agencies operate at less than seated capacity during a one-hour period, specific routes experience loadings in excess of seated capacity for periods from 5 to 30 minutes during the peak hour. In the experience of most agencies, the p.m. peak is more intense than the a.m. peak.

Among measures adopted by the City to improve transit service is the designation of some streets as transit preferential streets where transit is given priority. In the vicinity of the site, Market and Mission Streets are so designated in the Transit Preferential Streets Plan of the Transportation Element of the Master Plan. Two blocks east of the site, Steuart Street between Market and Mission Streets is so designated, and Fremont Street, two blocks west of the site, is similarly designated. The principal measure now in effect on one of the transit preferential streets in the area is the marked designation of exclusive bus (diamond) lanes and the prohibition of left turns on Mission Street west of Beale Street. Mission Street carries six Muni lines in the project vicinity, of which one has limited stops (14GL) and one is express (14X) (see Figure 14, page 33). (Due to a shortage of operable buses, the 14GL line was discontinued temporarily in October 1981.)

Of the other street segments bordering the project block only Main Street carries Muni routes. These are the 41 Union line which serves North Beach, Russian Hill, and Cow Hollow, and the 80X line, the Gateway Express, which provides express service between the Southern Pacific Station at Fourth and Townsend Streets and a curbside terminal on Front Street between Sacramento and Clay Streets. The one and only stop made by the 80X along its route is at a far-side stop on Main Street at Mission Street in the morning and at Beale and Mission Streets in the afternoon.

Muni has plans to increase the capacity of its Downtown service in several ways. Fifteen additional light-rail vehicles are on order for use in the Muni Metro system. Construction of a loop to replace the existing stub-end terminal at The Embarcadero is intended, with a possible surface extension on The Embarcadero. Implementation of planned improvements is partly contingent upon federal funding which has not yet been secured. Also planned is the introduction of articulated buses which have a motorized trailer joined to the coach and a capacity about 50 percent greater than conventional buses. None have been ordered to date./2//3/ Present scheduled outbound capacity on 52 downtown Muni lines between 4:30 and 5:30 p.m. is about 47,400. The projected capacity in January 1984 is about 50,900./3/

Increased demand for Muni service downtown is anticipated as a result of the projected growth of office space and the increasing shift of the mode of travel from the private automobile to public transit. The increase in demand is expected to match approximately the planned increase in capacity, so present operating conditions such as excessive crowding on some lines during peak hours would not be expected to improve.

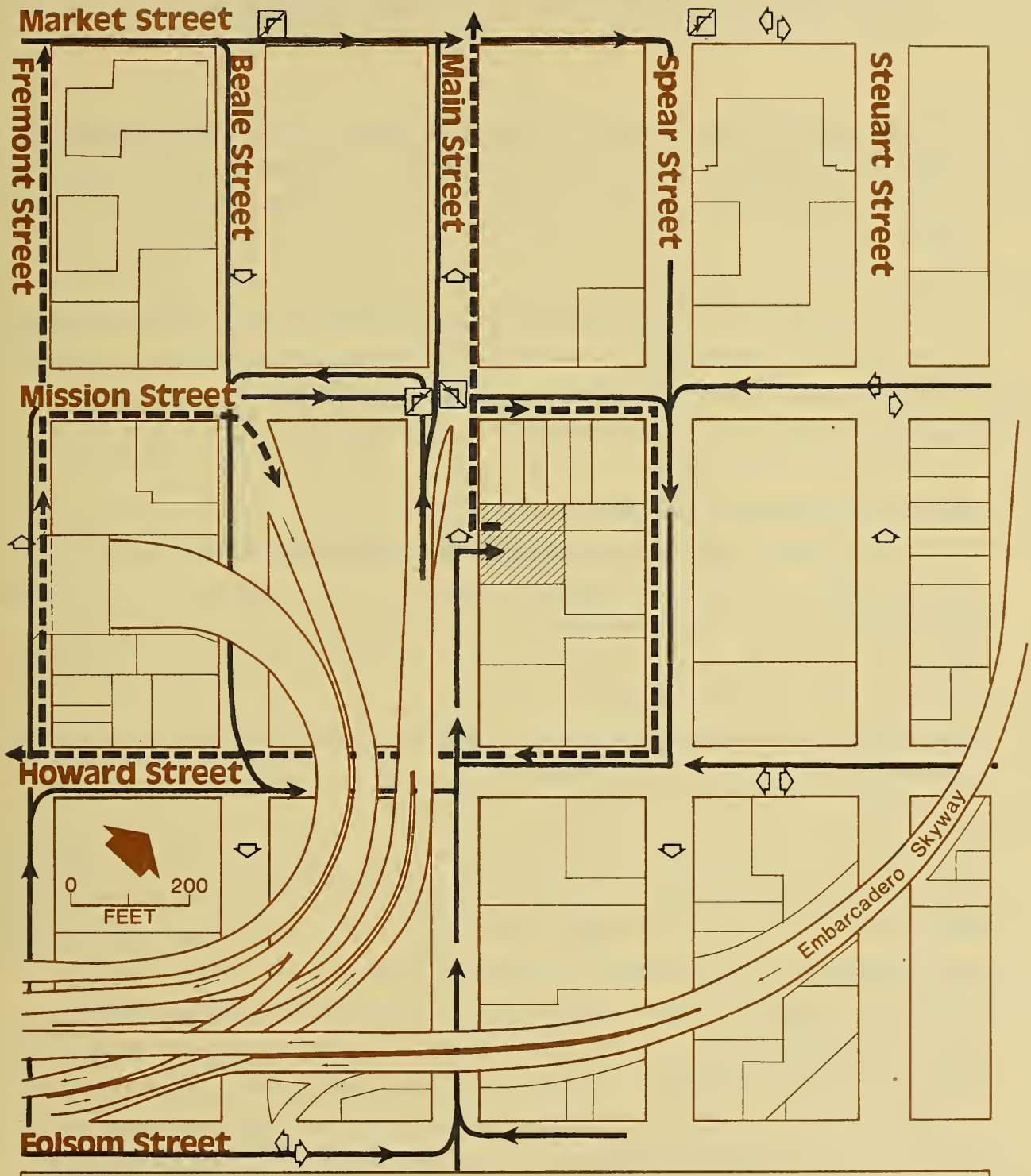
The estimated combined total outbound afternoon peak-hour downtown patronage of the regional transit systems was about 42,000 in 1980./4/ Estimates derived from studies by Muni and the Office of Environmental Review indicate that patronage in 1984, including that from the three buildings now under construction in the project vicinity, would be about 55,000./4//5/

PEDESTRIANS/6/

Pedestrian flows on Main Street at the project site are unimpeded (less than two persons per foot of sidewalk width per minute) during the afternoon peak-hour of 4:30 to 5:30. On the north side of Mission Street between Beale and Main Streets and Main and Spear Streets pedestrian flows are impeded (between two and six persons per foot of sidewalk width per minute). As there is no sidewalk available on the south side of Mission Street between Main and Beale Streets during present construction, and no southside crosswalk leading to that block across Main Street, the south side of Mission Street to the east between Main and Spear Streets is unimpeded. Other pedestrian routes in the project vicinity are unimpeded. (See Appendix A-3, page 141 for definitions of Levels of Service for Pedestrians.)

PASSENGER AND SERVICE VEHICLES

Local streets and circulation patterns serving the site and nearby ramp locations are shown in Figure 15. Access to the freeways connecting with the East Bay, San Francisco Airport and the Peninsula is provided by the pair of ramps opposite the site at Main and Mission Streets (off-ramp) and at Beale and Mission Streets (on-ramp). Other ramps connecting with the Bay Bridge are



Legend

Project Location

Access to Project

Egress from Project

Direction of Traffic

No Turns

Figure 15:

Vehicular Routes to the Project Site

at First and Harrison Streets (on) and on Fremont Street between Howard and Folsom Streets (off). The next nearest ramps connecting with the James Lick Freeway are at Fourth and Harrison Streets (on) and Fourth and Bryant Streets (off).

The site is adjacent to the Downtown Core automobile control area designated in the Downtown Transportation Plan of the Transportation Element of the San Francisco Master Plan./7/ This area is described in the Plan as "that intensely populated area which functions as a financial, administrative, shopping and entertainment center where priority must be given to the efficient and pleasant movement of business clients, shoppers and visitors; where a continuing effort should be made to improve pedestrian, transit and service vehicle access and circulation; where priority for the use of limited street and parking space within this core should be available for these functions; and where a continuing effort should be made to reduce the impact of the private commuter vehicle." The site is in an area designated as a parking belt which is considered as "appropriate for short-term parking facilities."

Main Street is one-way northbound and has three moving lanes, which reduce to two lanes at Mission Street, and curbside parking on both sides in the project block. The Main Street off-ramp delivers two lanes of vehicles to Main Street north of Mission Street at the intersection with Mission Street. No right turns are permitted from the ramp across Main Street to eastbound Mission Street lanes; one left-turn lane is provided to westbound Mission Street. As shown on Figure 15, page 37, access to the site from the Main Street off-ramp requires four right turns: at Market, at Spear, at Howard, and at Main Streets. Or, as an alternative, four left turns can be made from the ramp: at Mission, at Beale, at Howard, and at Main Streets. Return to the Beale Street on-ramp requires six right turns: at Mission, Spear, Howard, Fremont, Mission, and Beale Streets.

Mission Street operates as a two-way, four-lane street with the outer lanes designated as diamond lanes for bus use only from 7:00 a.m. to 6:00 p.m. west of Beale Street. Howard Street is two-way east of Fremont Street and one-way westbound west of Fremont Street. Fremont Street is a four-lane, one-way street northbound. Beale Street is one-way southbound with four lanes north of Mission Street and three lanes south of Mission Street. Spear Street is a one-way, three lane street, southbound, and is controlled by four-way stop signs at the Howard Street intersection. The other three intersections on the periphery of the block containing the site are controlled by two-phase signals.

In addition to the transit preferential designations described above, most other streets in the project vicinity are given special designations in the Transportation Element of the San Francisco Master Plan./7/ Main, Beale, Steuart, Market and Howard Streets are designated as major thoroughfares in the Thoroughfares Plan./8/

At the present time the signalization in the South of Market area is being evaluated by the Traffic Engineering Division of the Department of Public Works in order to develop programs for optimizing traffic flow in the areas. Therefore, signal timing patterns are expected to change in the near future with subsequent changes in traffic conditions in the area. An analysis of existing demand on the capacity of key intersections in the project vicinity was made for this report which considered the loading of each signal phase separately. The intersections at Mission and Beale Streets and at Mission and Main Streets are operating at or near to capacity. Pedestrians in the crosswalk across Main Street on the north side of Mission Street interfere with left-turn movements from eastbound Mission Street, contributing to congestion there. Other intersections in the project vicinity are currently at less than capacity.

On the south side of Mission Street between Main and Spear Streets there is curbside parking. Parking maneuvers and service vehicle loading and unloading sometimes block one of the two eastbound lanes of Mission Street, affecting transit vehicles. In the block between Main and Beale Streets, heavy or

impeded westbound left turns from Mission Street to the Beale Street on-ramp, or from eastbound Mission Street onto northbound Main Street block the use of those turning lanes by through traffic during the afternoon peak hour. The two outer lanes are shared by buses and other vehicles. The exclusive bus lanes on Mission Street do not extend east of Beale Street because of the need for the use of the outer lanes by other vehicles in the Main-Beale ramp block. Movement in the outer lanes is also impeded.

PARKING

There are 24 one-hour metered spaces on both sides of Main Street between Howard and Mission Streets in the project block. A designated loading zone prohibits curbside parking in front of the buildings on the site, but as many as 12 vehicles have been observed diagonally parked in the yellow and red zones. No marked bus stops are located on this segment of Main Street.

Long-term parking facilities are south, east, and west of the project site. Pricing in these areas favors long-term parking as the maximum cost is accumulated within two or three hours at the short-term rate. Parking rates range from $1.50 per day to $5.00 per day, decreasing with increasing distance south of Market Street.

In July 1980, a survey of commercial off-street parking made in the area bounded by The Embarcadero, Washington Street, Kearny Street, Third Street, and Harrison Street showed 14,800 spaces of which 1,500 were vacant on a daily basis. This was a vacancy rate of ten percent./9/ In July 1981, a supplemental survey of the area south of Harrison Street bounded by Third Street, Brannan Street, and The Embarcadero, showed a total of 1,027 commercial spaces with a vacancy rate of seven percent. On-street parking in the area was 90 to 95 percent occupied./10/ The parking locations are shown on Figure 16.

TJKM Study Area Boundary July 7-9, 1980
ESA Study Area Boundary (a southern extension of the TJKM Study Area)
Off-Street Commerical Parking

Figure 16:
Location of Off-Street Parking in the Downtown Area

NOTES - Transportation

/1/ This observation by Environmental Science Associates was confirmed by Susan Chelone, Transit Planner, Municipal Railway, telephone conversation, November 27, 1981.

/2/ San Francisco Municipal Railway, April 1980, Five-Year Plan: 1980-85.

/3/ Susan Chelone, Transit Planner, Municipal Railway, personal conversation, July 22, 1981. This information is also found in the Five-Year Plan: 1981-86.

/4/ Office of Environmental Review, October 1980, Guidelines for Environmental Evaluation - Transportation Impacts.

/5/ Department of City Planning, October 1980, Environmental Impact Report, San Francisco Hilton Hotel, Tower No. 2, page 58.

/6/ Pedestrian data used in this analysis are for the afternoon peak hour of 4:30 to 5:30. Although a surge of pedestrian flow toward Market Street occurs at noontime, most trips are within the Downtown area. As noontime flows are less than at the afternoon peak hour, the analysis made for this report is based on the evening peak, or worst-case, situation.

/7/ Department of City Planning, 1972, amended 1977, Transportation Element of the Master (Comprehensive) Plan.

/8/ Major Thoroughfares are those "whose primary function is to link districts within the city and to distribute traffic from and to the freeways."

/9/ Frederick C. Dock, Traffic Engineer, TJKM, telephone communication, July 10, 1981.

/10/ Environmental Science Associates survey, Tuesday, July 14, 1981, 9:45 a.m. to 11:45 a.m.

F. NOISE

The ambient noise of the project site is typical of downtown San Francisco and is primarily determined by vehicular traffic. Trucks, buses, automobiles, and emergency vehicles, as well as construction equipment, are the major contributors to the level of noise. The Environmental Protection Element of the San Francisco Master Plan indicates a day-night average noise level (L_{dn})/1/ of 75 dBA/2/ on Mission Street and 70 dBA on Main Street./3/ A complete discussion of acoustical concepts is available for public review at the Department of City Planning, Office of Environmental Review, 45 Hyde Street, Room 319.

NOTES - Noise

/1/ L_{dn}, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises. Noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

/2/ dBA is the measurement of sound in units of decibels (dB). The "A" denotes the A-weighted scale which simulates the response of the human ear to various frequencies of sound.

/3/ Department of City Planning, Environmental Protection Element of the Comprehensive (Master) Plan, September 1974, page 17.

G. AIR QUALITY

The Bay Area Air Basin in which the project site is located has been designated by the California Air Resources Board (ARB) as a nonattainment area/1/ for ozone (oxidant), particulate, and carbon monoxide; San Francisco proper is a nonattainment area for total suspended particulate (TSP) and carbon monoxide (CO). The standards for these pollutants are now and are expected to continue to be violated.

The Bay Area Air Quality Management District (BAAQMD) operates an air quality monitoring station approximately 1.7 miles south of the site on 23rd Street east of Potrero Hill. A three year summary of San Francisco data collected,

the corresponding air quality standards, and a discussion of major pollutants are shown in Table 3. These data are representative of the site with the exception of those for carbon monoxide, which are strongly influenced by local traffic.

The highest annual pollutant concentrations in San Francisco, while exhibiting high variability due to meteorology, have shown an overall improvement during the 1971-1980 period. No similar trend in the annual number of exceedances has been noted. However, exceedances are infrequent; only the standard for TSP was exceeded in 1980.

Carbon monoxide and TSP concentrations are highly localized in time and space, varying with activity levels and meteorology. In contrast, ozone concentrations, which arise from complex chemical reactions involving hydrocarbons and nitrogen oxides, are highest far downwind of sources.

The Bay Area Air Quality Plan, adopted in 1979 by the Association of Bay Area Governments,/2/ established control strategies to attain and maintain the various standards by either 1982 or by 1987 in the District. These strategies include stationary source and mobile source emission controls and transportation improvements implemented by ARB, BAAQMD, and the Metropolitan Transportation Commission. The most difficult standards to meet are those for photo-chemical oxidant. The Plan proposes no additional controls on nitrogen oxides, but proposes a 43 percent reduction in hydrocarbon emissions to meet the ozone (oxidant) standard by 1987. The District is expected to be in compliance with the carbon monoxide standard by 1984.

Using methods recommended by the BAAQMD, existing worst-case carbon monoxide concentrations at sidewalks in the project vicinity were calculated./2/ The results of these calculations are shown in Table 13, page 100. Concentrations in excess of the eight-hour standard were found at Beale and Main Streets south of Mission Street. The one-hour standard was found not to be exceeded at any point in the vicinity of the project.

TABLE 3: SAN FRANCISCO AIR POLLUTANT SUMMARY, 1978-1980

STATIONS: 939 Ellis Street and 900 23rd Street, San Francisco*

POLLUTANT:	STANDARD	1978	1979	1980*
OZONE (O_3) (Oxidant)				
1-hour concentration (ppm /a/)				
Highest hourly average	(0.08) 0.12 /b,c/	0.11	0.08	0.09
Number of standard excesses		(4) 0	0	0
Expected Annual Excess/c/		0.3	0.0	0.0
CARBON MONOXIDE (CO)				
1-hour concentration (ppm)				
Highest hourly average	35 /b/	17	20	10
Number of standard excesses		0	0	0
8-hour concentration (ppm)				
Highest 8-hour average	9 /b/	9.4	13.8	7.5
Number of standard excesses		1	2	0
NITROGEN DIOXIDE (NO_2)				
1-hour concentration (ppm)				
Highest hourly average	0.25 /d/	0.30	0.16	0.17
Number of standard excesses		4	0	0
SULFUR DIOXIDE (SO_2)				
24-hour concentration (ppm)				
Highest 24-hour average	0.05 /d/	0.024	0.034	0.018
Number of standard excesses/e,f/		0	0	0
TOTAL SUSPENDED PARTICULATE (TSP)				
24-hour concentration (ug/m^3 /g/)				
Highest 24-hour average	100 /d/	128	117	173
Number of standard excesses/f/		1	1	6
Annual concentration (ug/m^3)				
Annual Geometric Mean	60 /d/	42	42	52
Annual standard excess		No	No	No

* In January 1980 all of the pollutant-monitoring functions of the 939 Ellis St. Station were transferred to the 900 23rd St. Station.
/a/ ppm: parts per million.
/b/ This is a national standard that is not to be exceeded more than once per year.
/c/ The national ozone standard was revised from 0.08 ppm to 0.12 ppm in January 1979. The number of excesses shown in parentheses is of the old 0.08 ppm standard in effect at the time. Expected Annual Excess is a three-year average of annual excesses of the new 0.12 ppm standard.
/d/ This is a California standard that is not to be equaled or exceeded.
/e/ The sulfur dioxide standard is considered to be exceeded only if there is a concurrent excess of the state ozone or suspended particulate standards at the same station. Otherwise, the national standard of 0.14 ppm applies.
/f/ Number of observed excess days (measurements taken once every six days).
/g/ ug/m^3: micrograms per cubic meter.
SOURCE: BAAQMD, 1978 - 1980, Contaminant and Weather Summaries.

NOTES - Air Quality

/1/ A non-attainment area is one in which the federal air quality standard for the designated pollutant has been violated within the past two to three years.

/2/ Association of Bay Area Governments, BAAQMD, and Metropolitan Transportation Commission, 1979, Bay Area Air Quality Plan.

H. GEOLOGY, SEISMICITY, AND HYDROLOGY/1/

GEOLOGY

The project site is on nearly level ground, varying in elevation from -1.0 to 0.0 feet, San Francisco Datum, which corresponds to 8.6 feet above mean sea level (MSL). The project site was originally under the waters of San Francisco Bay. During the mid-to late-1800s, the shoreline was progressively extended to the east by filling with sand and building debris.

The site is underlain by fill and recent and old bay sediments to a depth of about 200 feet below the surface, where bedrock occurs. Bedrock consists of weathered sandstone and shale of the Franciscan Formation. The upper layers of fill and recent Bay mud sediments, which extend to a depth of about 60 to 100 feet, are generally unsuitable for support of large multi-story buildings. Such buildings are usually supported by piles driven down to the dense sand layers beneath the Bay mud. The types and depths of sediments underlying the project site are shown in Appendix B-1, page 146.

The site is classified as being in an area of major subsidence potential./1b//2/ Placement of fill on bay muds in the late nineteenth century caused the bay deposits to consolidate, resulting in about nine feet of subsidence in the project area./3/ After the 1906 earthquake, additional fill was placed where localized subsidence had occurred. Subsidence has essentially stopped for the present, although it could be reactivated if additional fills or buildings are added./1a/

SEISMOLOGY

The site is located within the seismically active San Francisco Bay Region. While no active faults/4/ are known to exist within the City of San Francisco, several active faults in the region would affect the site. These are: the San Andreas Fault, located ten miles west of the site, the Hayward Fault, located nine miles east of the site, and the Calaveras Fault, located 14 miles east of the site.

The San Andreas Fault produced major earthquakes in 1838, 1865, and 1906 (the San Francisco Earthquake). The Hayward Fault produced major earthquakes in 1836 and 1868. The Calaveras Fault produced a minor earthquake in 1943./1c/ Earthquakes can be expected in this region in the future. Within the next 60 to 170 years (estimates of recurrence intervals vary), at least one earthquake of a magnitude similar to the 1906 San Francisco Earthquake (about 8.3 on the Richter Scale) and several earthquakes comparable to the 1957 Daly City earthquake (about 5.3 on the Richter Scale) can be expected to affect the site./5/

Potential seismic hazards on the site include groundshaking, liquefaction, subsidence, and tsunami inundation./5/ Groundshaking is one of the more destructive seismic hazards, and generally causes the most damage. Groundshaking is expected to be violent on the site for a 1906-type earthquake. Groundshaking of this magnitude could cause general collapse of poorly constructed brick structures, such as the one on the site, and serious cracking in better buildings. Lateral displacement of streets, bending of rails, and ground fissuring would also result./1b/

Portions of the loose sand fill below the water level are susceptible to liquefaction during a major earthquake./1a/ Liquefaction usually results in ground slippage and failure when under load, causing loss of support to overlying structures on shallow foundations. Subsidence, as mentioned above, may also be seismically induced, causing uneven settling of the ground surface with resultant warping or collapse of shallow foundations.

There is a perpetual possibility of damage to portions of the San Francisco waterfront from tsunamis. The historic occurrence of such waves in San Francisco Bay has been infrequent. Studies by the U.S. Army Corps of Engineers estimate that the maximum vertical tsunami wave height along the shore nearest the site would be 5.5 feet above MSL in a once-in-100-years occurrence and 9.7 feet above MSL in a once-in-500-years occurrence./1d/ (The building site is 7.6 feet above MSL at its lowest point.)

The site is low-lying, and under natural drainage would receive runoff from the surrounding areas to the north, south, and west. Surface runoff is generally greatest during the wet-weather November to April rainy season. As the site is covered with impermeable surfaces, all rainfall flows as runoff from the site. The site is not located within a floodplain zone.

The groundwater level at the site was measured in one of the boring holes several weeks after drilling at 8.5 feet below the street level.

NOTES - Geology, Seismology, and Hydrology

/1/ This section is based in large part on data provided by the project geotechnical consultant in:

a. Harding-Lawson Associates, August 5, 1981, Soil Investigation, 115-135 Main Street Office Building, San Francisco.

Other reports consulted include:

b. URS/John A. Blume and Associates, 1974, San Francisco Seismic Safety Investigation.

c. Cooper-Clark and Associates, 1974, Technical Report Geotechnical Investigation, City of San Jose's Sphere of Influence, prepared for City of San Jose.

d. Garcia, A. and J. Houston, 1975, Type 16 Flood Insurance Study - Tsunamic Predictions for Monterey and San Francisco Bays and Puget Sound, Report to the U.S. Army Corps of Engineers, Vicksburg, Mississippi.

/2/ Subsidence is an uneven local settlement of the ground surface due to the settling of compressible soils that can be activated by earthquake-induced ground motion or by the placement of heavy buildings.

/3/ San Francisco Department of City Planning, June 14, 1979, Environmental Impact Report EE 78-207, Federal Reserve Bank of San Francisco.

/4/ An active fault is a fault which has a historic record or other geophysical evidence of movement within approximately the last 10,000 years.

/5/ The Richter Scale is a logarithmic scale used to measure the energy released by an earthquake.

/6/ Groundshaking is the transmission of earthquake vibrations through geologic materials and structures. Liquefaction is the transformation of saturated granular material, such as loose, wet sand, into a fluid-like state similar to quicksand, caused by seismic shaking. A tsunami, or seismic sea wave, is a series of long-period waves generated by some earthquakes, undersea landslides or volcanos. Upon reaching the shallow water of coastal areas, the waves greatly increase in height and may cause localized flooding. The San Andreas Fault does not cause earthquakes of the type that cause tsunamis.

IV. ENVIRONMENTAL IMPACT

The Initial Study for this project, which was published on August 7, 1981 (see Appendix C, page 147) concluded that the following issues would not be included in the EIR for the reasons stated, as follows:

Relocation. The printing firm on the site has made arrangements for relocating. The sponsor would provide assistance if needed in the relocating of the business at 115 Main Street.

Noise. After completion the project would not increase audible noise levels in the vicinity.

Public Services and Utilities. The increased demand for public services and utilities attributable to the project would not require additional personnel or equipment.

Biology. The project would have no effect on plants or animals.

Construction Air Quality. Construction activities would not increase the frequency of violations of air quality standards.

Other issues required by the California Environmental Quality Act to be included in an EIR are discussed below.

A. LAND USE AND ZONING

The proposed project would represent a continuation of the current trend of new office construction in the blocks south of Market Street between Market and Howard Streets.

The proposed project would comply with Objective 6 of the Commerce and Industry Element of the Comprehensive Plan to "maintain and improve San Francisco's position as a prime location for financial, adminstrative, corporate, and professional activity." By replacing a supporting industrial activity, -- the color printing specialists at 135 Main Street -- the project would seem to not comply with Policy 2 of Objective 6 which aims to "minimize displacement of other viable uses . . . within the South-of-Market area...such as wholesalers, printers, and delivery firms". However, the printing firm has merged with another firm and intends to move its personnel to a plant three and one-half blocks from the site. The building is expected to be vacated by February 1982./1/

The proposed office uses on the site would be similar to those in existing office buildings in the vicinity and to those expected in buildings under construction or undergoing environmental review. Ground-level retail uses would be expected to serve employees in the project and in nearby buildings. The proposed project would contain 264,687 gross square feet on a site where 264,687.5 gross square feet would be allowed by the prevailing 14:1 Floor Area Ratio. The project would be 340 feet high, 60 feet lower than the maximum height of 400 feet permitted on the site. The building would be 125 feet in its longer dimension and 166 feet in its diagonal measurement, complying with the maximum 200-foot diagonal measurement permitted by the bulk provisions of Section 270 of the City Planning Code. The proposed basement parking area is less than three percent of the total floor area, which is four percent less than the seven percent permitted by Section 204.5(c) of the Planning Code as an accessory use.

The floor area of the project, of the three nearby buildings under construction, and the four other buildings in the project vicinity which are proposed and undergoing environmental review, are shown in Table 4. These buildings are included in the cumulative analyses in this report.

The proposed use of the project site for an office building would comply with the description of the C-3-O District in Section 210.3 of the City Planning Code as "playing a leading national role in finance, corporate headquarters and service industries, and serving as an employment center for the region.

TABLE 4: FLOOR AREA OF MAJOR PROJECTS PROPOSED OR UNDER CONSTRUCTION IN THE SITE VICINITY

PROJECTS UNDER CONSTRUCTION	ON-SITE PARKING SPACES	GROSS SQ. FT. OF RETAIL	GROSS SQ. FT. OF OFFICE
150 Spear	49	4,800	260,500
Federal Reserve	12	None	460,000
Pacific Gateway	81	7,550	564,000
Sub-Total	142	12,350	1,284,500
THE PROPOSED PROJECT			
135 MAIN STREET	22	4,000	260,500
OTHER PROPOSED PROJECTS			
Spear/Main	13	7,460	263,050
101 Mission	4	4,000	181,960
Mission/Main	40	4,700	341,250
201 Spear	56	-	250,000
Sub-Total	113	16,160	1,036,260
TOTAL	277	32,510	2,577,260

. . . Unrelated uses [are] excluded in order to conserve the supply of land in the [downtown] core and its expansion areas for further development of major office buildings."

Concerning new residential development, the Residence Element of the Master Plan/2/ seeks in Policy 2 to "Encourage multiple-residential development in conjunction with commercial uses in the Downtown commercial area." No housing is proposed on the site because the project sponsor considered the site to be inappropriate for housing as the vicinity has no residential services or amenities, because of its proximity to the freeway off-ramp, and because the site was considered to be too small for a compatible office and housing combination. Alternative projects with housing are discussed in Section VII, Alternatives, page 125. The housing creditabile as a housing impact mitigation for this project includes that recognized for the project sponsor's participation in the Harkness House rehabilitation for the elderly is cited in Section IV.D, page 71. This rehabilitation action by Daon Corporation complies with Policy 1, Objective 7 of the Residence Element which states that "rehabilitation activities should be encouraged throughout the region." Policy 2 of Objective 7 of the Residence Element seeks to "Encourage the distribution of low- and moderate-income housing throughout the Bay Area." The Harkness House rehabilitation program complies with this policy as all of the units are eligible for persons of low and moderate income.

NOTES - Land Use and Zoning

/1/ JPP Graphic Arts Center, Frankland L. Cutshall, President, telephone communication, November 6, 1981.

/2/ Department of City Planning, Residence Element of the Master (Comprehensive) Plan, December 11, 1975.

B. VISUAL QUALITY AND URBAN DESIGN

The 24-story project, rising to a height of 340 feet, would be more visible from the near vicinity than the two two-story buildings presently on the site. It would be especially visible from the Main Street freeway off-ramp which is opposite the Main Street facade of the project. From a distance it would appear as a part of the growing Financial District composed of office buildings existing, under construction, and, in the future, those that are approved of the projects now proposed. The project would be most distinctive when seen from the south or southeast, for its upper story setback and rounded penthouse roof would distinguish its form from that of nearby buildings which have generally squared-off, flat tops. It would be several stories above nearby buildings when seen from this vantage, although adjacent to the proposed higher, 25-story Mission-Main Building, so that this stepped setback feature would be easily identified. From the north and west the building would be obscured from view by higher intervening buildings. This would also be the case from Twin Peaks where the Pacific Gateway Building and the Telephone Building at 140 New Montgomery Street would obscure it from view. From Yerba Buena Island or the Bay Bridge (see Figure 17) and from Potrero Hill (see Figure 18, page 55) it would be seen against a backdrop of higher buildings. From Rincon Hill, it would appear also against a backdrop of the higher buildings to its north (see Figure 19, page 57).

The project would not obstruct any scenic views or vistas now available to the public. Views across the site to the Bay from the Main Street off-ramp or from Rincon Hill are blocked by existing buildings including One Market Plaza and the 150 Spear Street Building. The building would partially block views to the east or southeast from some floors of the Pacific Gateway Building now under construction opposite the site, and from the PG&E Building at 77 Beale Street. It would block views to the west from all floors on the northern part of the 150 Spear Street Building now under construction on the parcel east of the project site.

◆ **Project**

STRUCTURES PROPOSED OR UNDER CONSTRUCTION	*1 315 Howard St.*	*5 Mission Main*	*9 4 Embarcadero Center*
	2 Spear-Main	*6 101 Mission*	*10 Proposed Project*
	3 150 Spear	*7 5 Fremont St.*	
	4 Pacific Gateway	*8 101 California St.*	
EXISTING STRUCTURES	*A Howard-Main Bldg.*	*D Bank of America*	*G 444 Market St.*
	B 1 Market Plaza	*E Transamerica Bldg.*	
	C Ferry Bldg.	*F 333 Market St.*	

SOURCE: Environmental Science Associates, Inc.

Figure 17: View of the Project from Yerba Buena Island

▲ Project

STRUCTURES PROPOSED OR UNDER CONSTRUCTION

1 Pacific III
2 Crocker Bank
3 101 Montgomery St.
4 456 Montgomery St.
5 Hunt-Knight Bldg.
6 One Sansome St.
7 111 Jessie St.
8 101 California St.
9 5 Fremont Center
10 Pacific Gateway
11 Mission-Main Bldg.
12 Spear-Main
13 315 Howard St.
14 Proposed Project

EXISTING STRUCTURES

A Bank of America
B Transamerica Building
C 111 Sutter St.
D 45 Fremont St.
E One Market Plaza
F. P.G.& E.

SOURCE: Environmental Science Associates, Inc.

Figure 18: View of the Project from Potrero Hill

Project

Mission-Main Building

Spear-Main Building

Figure 19:
View of the Project from Rincon Hill
Looking Northeast

The project architects have endeavored to relate the proposed building to those being planned on either side while retaining the visual identity of the building. Provision of a link in the interior-block pedestrian way with connections to such a facility on either side has also been achieved. Identifying features of the building would include tinted, transparent glass in horizontal floor-to-ceiling rows on the Main Street side of the building, metal-inlaid spandrels, a rounded copper roof, an entry court and an upper level setback and terrace on the east side of the building.

The Urban Design Element of the Master Plan of San Francisco describes City objectives and policies pertaining to urban design. The relationships between these policies and the design of the proposed project are summarized in Table 5.

TABLE 5: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE SAN FRANCISCO MASTER PLAN* AND THE PROPOSED PROJECT

APPLICABLE URBAN DESIGN POLICIES	RELATIONSHIP OF THE PROJECT TO APPLICABLE POLICIES
A. Policies for City Pattern	
1. Policy 1: "Recognize and protect major views in the City, with particular attention to those of open space and water." (page 10)	The 22-story project would become a part of the group of buildings in the Financial District, forming a transition from lower buildings (18 and 19 stories) to the south and east, and higher buildings (33, 40, and 44 stories) to the west and north. Bay views from nearby buildings would be partially blocked from some levels and totally blocked from lower levels.

2. Policy 3: "Recognize that buildings when seen together, produce a total effect that characterizes the City and its districts." (page 10)	The building would relate to adjoining buildings in the height of its base element, and would form a step in the skyline transition from 18 and 19 stories (150 Spear and Spear-Main) to higher buildings of 25 stories (Main-Mission), 33 stories (Pacific Gateway), and 40 stories (Spear Street Tower, One Market Plaza).
3. Policy 6: "Make centers of activity more prominent through the design of street features and by other means." (page 12)	The three-story-high entrance courtyard on Main Street and its pavement and planting would be visible from Main Street as a distinctive feature of the building. The entrance court and the covered garden on the interior-block walkway would provide distinctive pedestrian amenities.
4. Policy 8: "Increase the visability of major destination areas and other points for orientation." (page 13)	The project would be prominently visible to passengers of vehicles entering the City via the Main street freeway off-ramp opposite the site.
B. Policies for Conservation	
5. Policy 4: "Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development." (page 25)	The project would replace two two-story buildings, one of which is brick. Planning for the project assumed the replacement of similar two story buildings north of the project where the Mission-Main building is proposed.
6. Policy 6: "Respect the character of older development nearby in the design of new buildings." (page 25)	Like most new construction north of the project site, the building would not use brick for ornamental purposes, a material common to older buildings remaining in the vicinity and used by some newer buildings south of the project.

C. Policies for Major New Development

7. Policy 5: "Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development." (page 36)	The project complies with the existing height limit on the site and complies with the concept of transition between higher buildings inland and lower buildings at the Bay shore. As noted in No. 1 above, the project would be a visual step between higher and lower buildings and, therefore, would fit into the pattern of decreasing building heights away from the center of the C-3-O district toward the Bay.
8. Policy 6: "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction." (page 37)	On a lot that is 137.5 feet by 137.5 feet, the building would be 125 feet by 109 feet. The building to the south would be 132.5 feet deep compared with the 109-foot depth of the project, but would be 7.5 feet shorter in width. The 150 Spear Street Building to the east of the project has a depth of 127.5 feet and a similar width. The building sizes in the block relate generally to the size of the sites, which are similar. Only the four-story building at 120 Spear Street is smaller in bulk as its site is only 45 feet wide.

*Department of City Planning, 1971, Urban Design Element of the Comprehensive (Master) Plan, 1971. Page references are shown in parentheses.

SUNLIGHT AND SHADOW PATTERNS

The project would create shadow patterns in addition to those that exist at present. Existing shadow patterns of buildings on the project block only are shown in Figures 20, 22, and 24, pages 63, 65, and 67. Some shadow patterns

of new buildings proposed for the project block, most notably the adjacent Mission-Main Office Building, the 101 Mission Street Office Building, and the Spear-Main Office Building, would coincide with those of the project.

From the early morning to mid-morning, shadows from cumulative development on Mission Street and on Main Street in the project block would be more extensive than the existing shadows. From spring to autumn, much of the shadow pattern cast by the project during this time would be blocked by the Pacific Gateway Office Building under construction and the PG&E Building. See Figures 21, page 64, and 23, page 66, for the portion of the shadow pattern contributed by the project.

During the mid-morning to mid-afternoon period, Spear Street and Mission Street would be partially shaded in the project vicinity from spring to autumn, and fully shaded during the winter months. Shadows from the project would extend to Spear Street and onto Mission Street only during the winter months (see Figure 25, page 68). Most of the shadow would be produced by the approved 101 Mission Building.

From mid-afternoon to evening, shadows would be similar to existing shadow patterns, although more of Steuart Street would be shaded during the winter months. Most of the project shadow would be intercepted by the 150 Spear Street Building. See Figure 25, page 68.

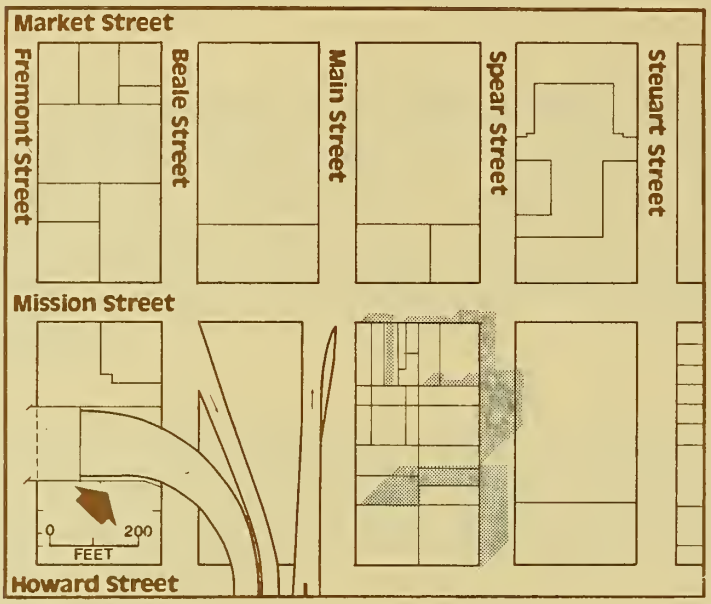
The ground-level setback area on Mission Street between Steuart and Spear Streets at One Market Plaza would receive more shadow during the mid-morning to mid-afternoon period from autumn to spring than at present. During the autumn and spring months, the increase in shadows would be cast by the 101 Mission Street Building. During the winter months, the Mission-Main Building, the project, the 101 Mission Street Building, and the 150 Spear Street Office Building would all cast shadows on the setback area. Shadows cast by the project would be intercepted by those cast by the 101 Mission Street Building

and the 150 Spear Street Building. Without the project, shadow patterns on the terrace would be the same as with the project if the 101 Mission Building is built.

The pedestrian walkway proposed for the project block would be fully shaded most of the time and partially shaded at all times of the year.

8 A.M.

Noon



4 P.M.

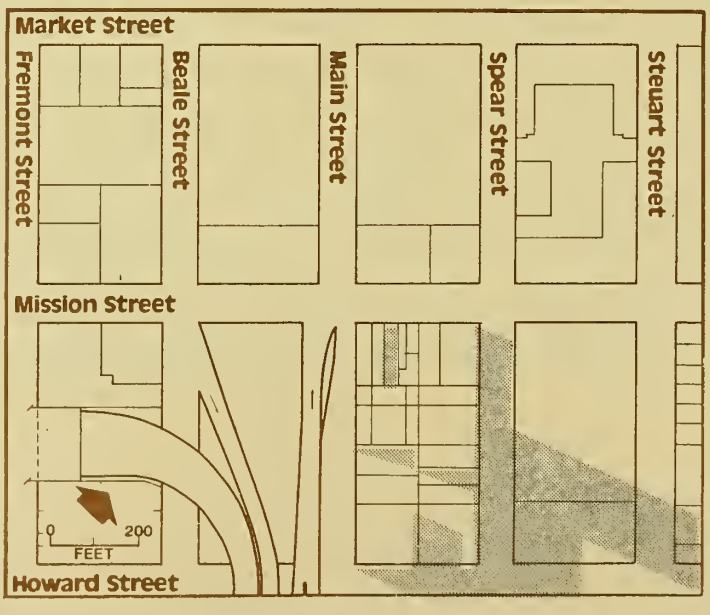
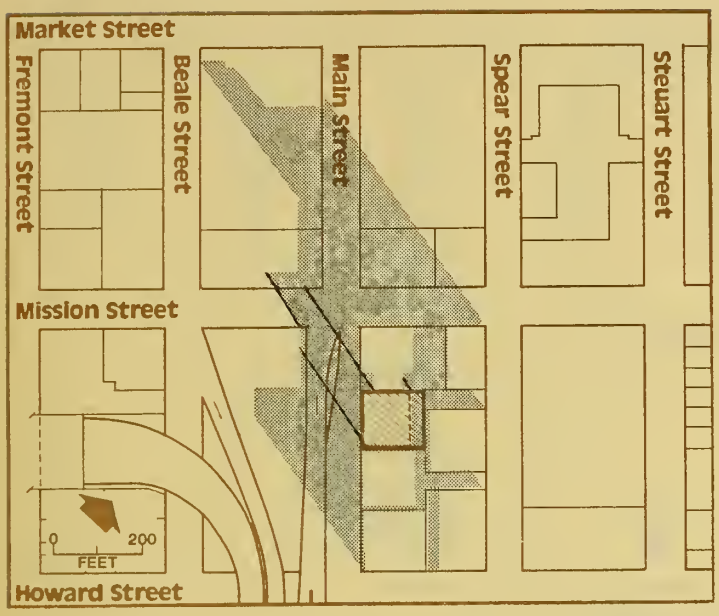


FIGURE 20

Existing Shadow Pattern – March and September



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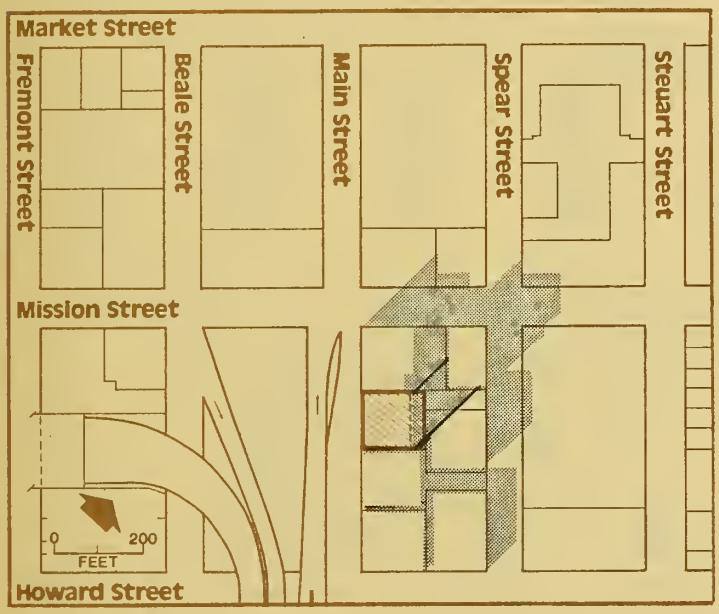

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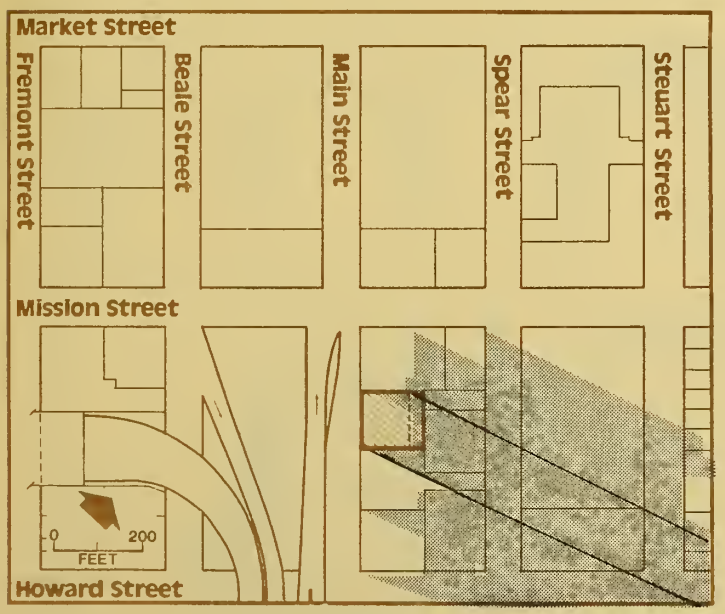
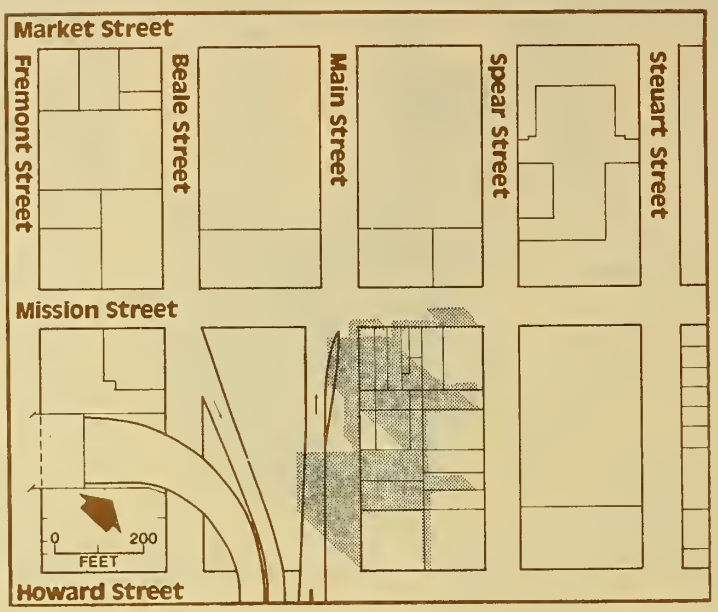


4 P.M.

FIGURE 21

Project and Cumulative Shadow Pattern – March and September

8 A.M.



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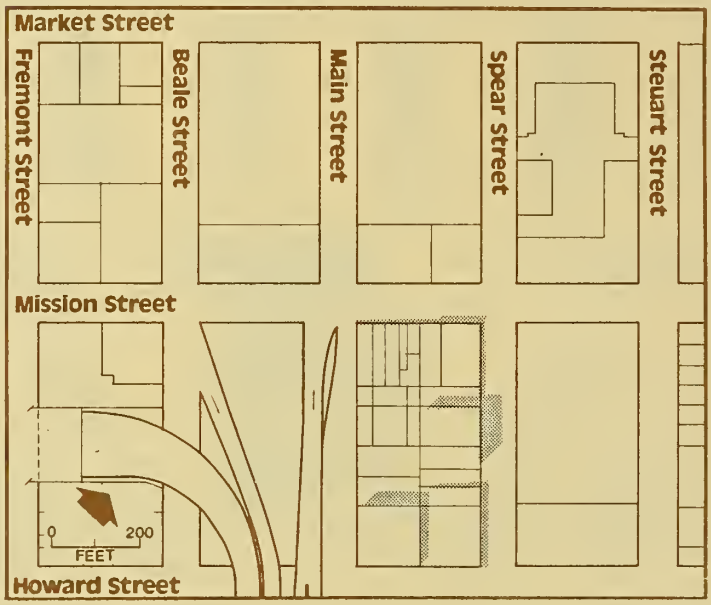

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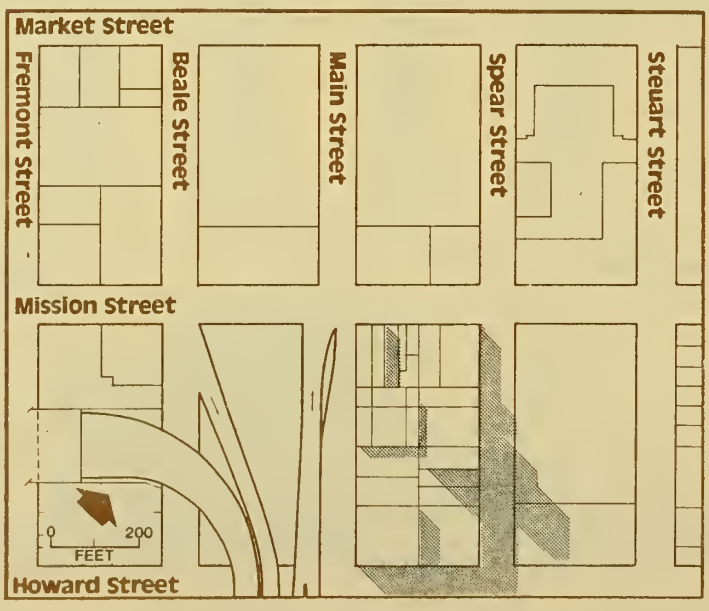
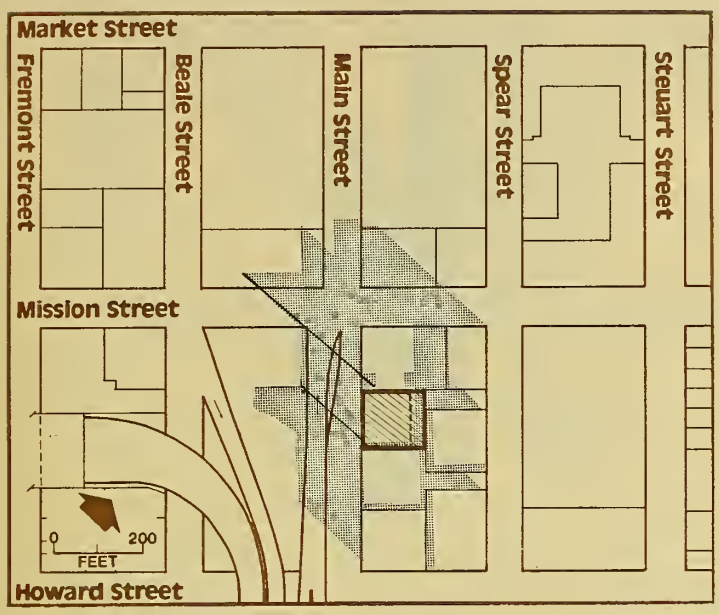


FIGURE 22

Existing Shadow Pattern – June



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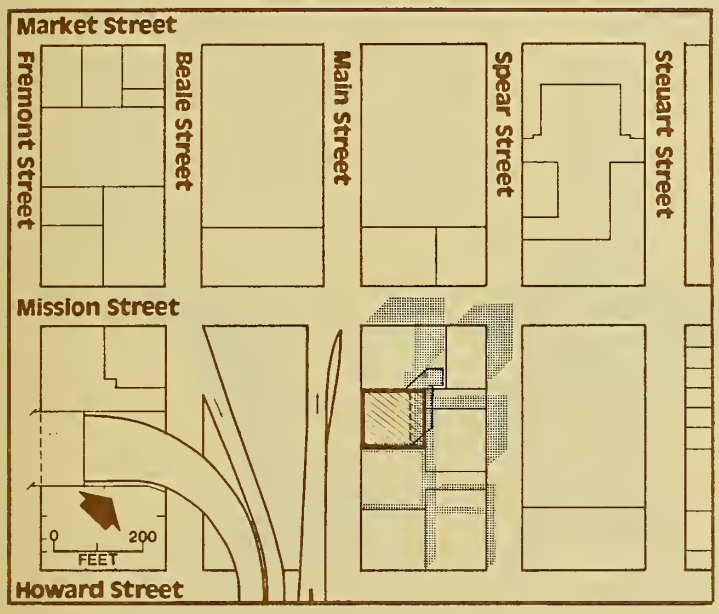

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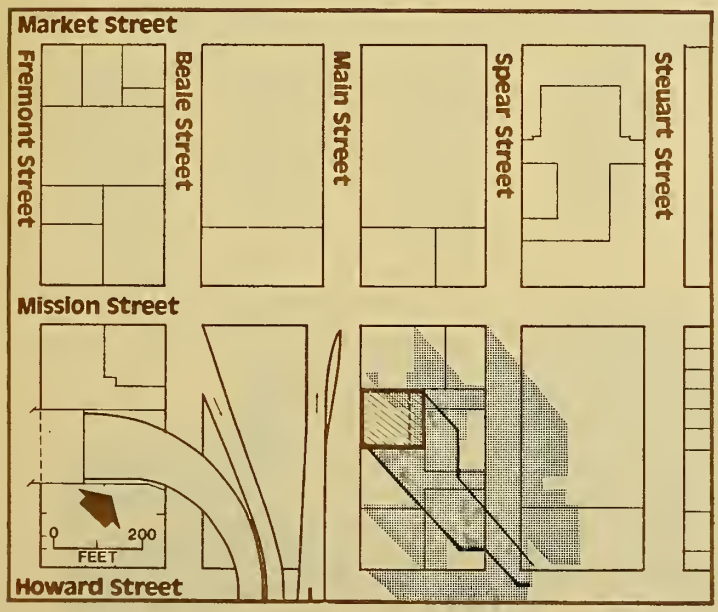
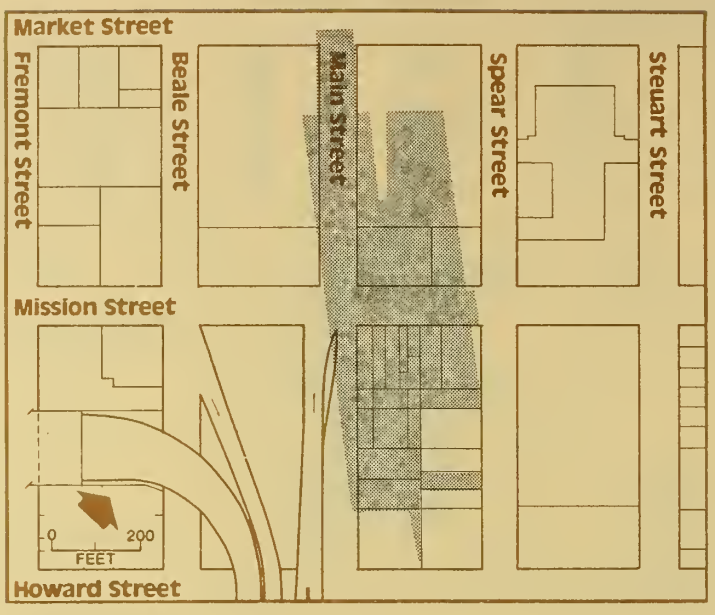


4 P.M.

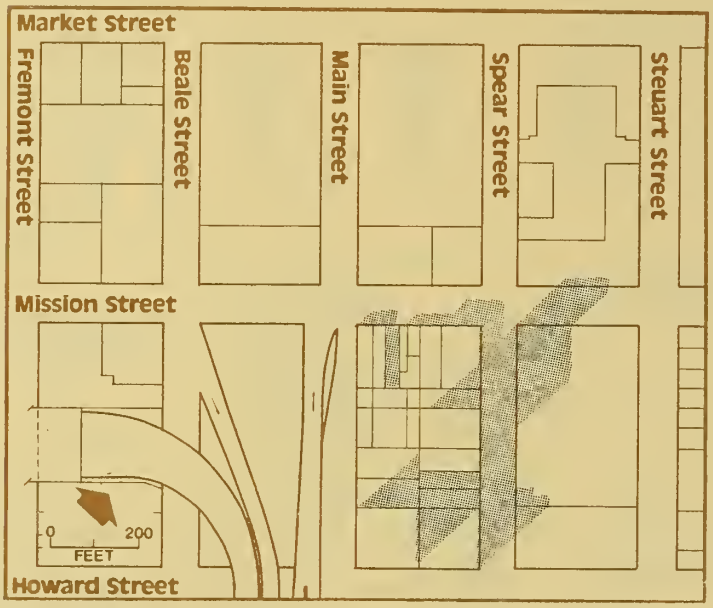
FIGURE 23

Project and Cumulative Shadow Pattern– June

8 A.M.



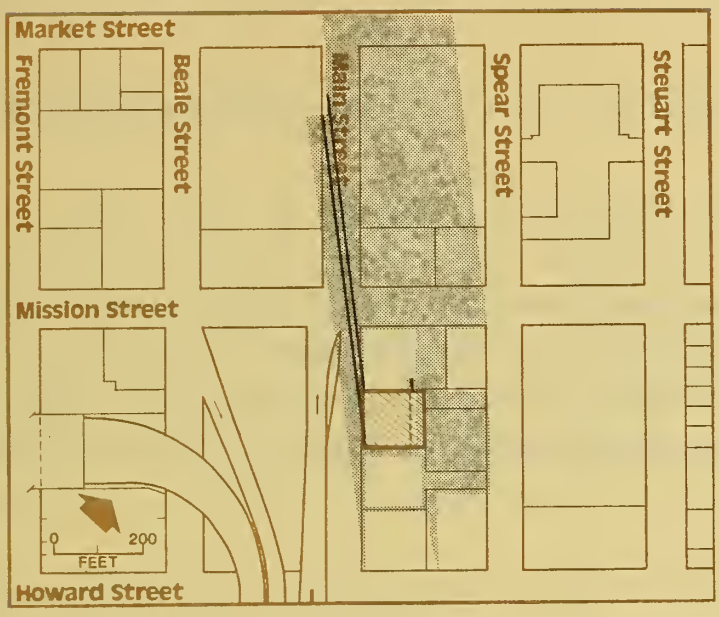
Noon



4 P.M.

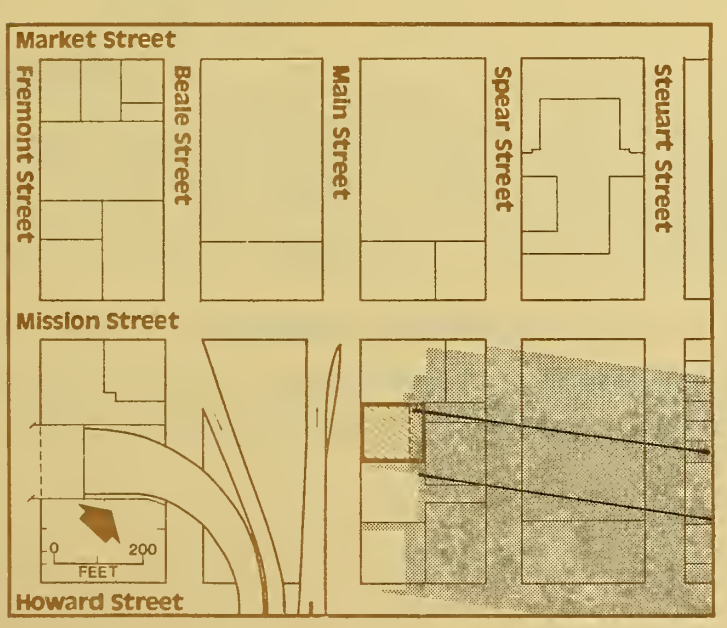
FIGURE 24

Existing Shadow Pattern - December



8 A.M.

Noon



4 P.M.

FIGURE 25

Project and Cumulative Shadow Pattern – December

WINDS

The project site is in an area downwind of the highrise corridor along Market and Mission Streets and is sheltered from the prevailing west and northwest winds. Consequently wind speeds at the site are generally low during the extended periods of the year when winds are commonly from the northwest and west./1/

The project site is sheltered from prevailing west winds by the Bechtel Building at 45 Fremont Street, the PG&E Building at 77 Beale Street and by the Pacific Gateway now under construction. The site is protected from northwest winds by buildings in the Market Street corridor and to the north.

Wind speeds at pedestrian levels are expressed as a proportion of the freestream wind speeds above wakes of surrounding buildings in a wind tunnel test facility./2/ The relationship between the proportion of the freestream velocity and the definitions of pedestrian-level wind speeds used in earlier San Francisco EIRs is shown below:/3/

Wind Speed Class	Percent of Freestream Speed
Low	0.00 - 0.19
Moderately Low	0.20 - 0.29
Moderate	0.30 - 0.49
Moderately High	0.50 - 0.69
High	0.70 - 1.00
Very High	over 1.00

For northwest winds, wind speeds are a low proportion of the freestream velocity in the project area. Wind speeds along Main Street south of Mission Street are low. At midblock in the project block, low windspeeds in the west-to-east direction occur.

The project design is one that would normally generate wind accelerations at the ground level if the building were freestanding. The shelter provided by existing and future structures reduces the potential for this effect.

Figure C-1, page 147, shows the changes in wind speed ranges for westerly and northwesterly winds at tested points in the project vicinity due to the proposed project and cumulative development, including projects under construction and proposed -- Federal Reserve, Pacific Gateway, 150 Spear Street, 101 Mission Street, Mission-Main, and Spear-Main. In front of the project site, west wind speeds would be increased from a low speed to a moderate speed, but would remain low under northwest winds.

NOTES - Visual Quality and Urban Design

/1/ Donald Ballanti, Certified Consulting Meteorologist, letter report, April 15, 1981. A copy is on file at the Office of Environmental Review, 45 Hyde Street, Room 319.

/2/ A study of localized mean wind speeds, turbulence and directions at and near the project site for freestream winds from the west and northwest was conducted using a scale model of the site and vicinity in an environmental wind tunnel. The study included separate tests under existing surface conditions, and proposed surface conditions with the project and the three other proposed buildings, Dr. Bruce White, August 1981, Wind-Tunnel Studies of the ESA-EIR-1135 Project. This report is on file at the Office of Environmental Review, 45 Hyde Street, Room 319.

/3/ Due to surface effects, wind increases with height above surfaces. The freestream velocity is the wind velocity unaffected by surface effects. The wind speed ratio expresses the relationship between the freestream velocity and the surface wind; therefore, a point having a "very high" wind speed ratio could experience light winds on a near-calm day. Similarly, a point found to have a "low" wind speed ratio could experience high speeds on an extremely windy day.

C. HISTORIC RESOURCES

As noted in Section III, C, page 28, the two buildings on the site are not noted on official lists of historic or architecturally significant buildings. The project would require the demolition of the two buildings currently on the site.

D. EMPLOYMENT, HOUSING, AND FISCAL FACTORS

OFFICE SPACE AND EMPLOYMENT

The proposed project would result in the demolition of the two existing buildings on the site and the construction of approximately 260,500 gross square feet of office space and approximately 4,000 gross square feet of retail space. The existing 135 Main Street building is occupied by a printing firm employing approximately 70 people. Because this firm has merged with another printing firm,/1/ its employees, who will move three blocks from the site, would not be considered as displaced by the project. Three to five employees would be displaced from 115 Main Street. If necessary, the project sponsor would provide relocation assistance through its real estate broker.

Approximately 1,070 permanent jobs would be accommodated on the project site. Because specific tenants are unknown at this time, this number was derived assuming 250 gross square feet per office employee and 350 gross square feet per retail employee. The net increase in employment at the project site would be about 995, including approximately ten persons involved in building maintenance and security.

Secondary employment impacts would result from permanent project employment because each employed person would generate additional employment by his or her demand for goods and services. Assuming that the jobs accommodated as a result of the project were primarily in the finance, insurance and real estate industries, this growth would result in approximately 1,175 additional jobs in other sectors of the Bay Area economy./2/ Total Bay Area employment attributable to the project would be about 2,160 (995 primary jobs plus 1,175 secondary jobs induced by the multiplier). Many of the jobs would be expected to be in San Francisco.

During the 20-month construction period, the project would generate approximately 270 person-years of employment. In addition, finishing the interior of the building would require an estimated 60 person-years of employment. About 500 additional labor years of employment would be generated as a result of the employment multiplier effect of project construction./3/

HOUSING

As indicated in the previous subsection, the project could result in an increase in downtown employment of approximately 995 jobs by 1984. To the extent that the project would attract out-of-area employees it would also contribute to an increase in local housing demand and to the imbalance between jobs and housing.

The expansion of downtown office space, reflecting the expansion of the financial-managerial sector of the San Francisco economy, provides one of the main sources of pressure on San Francisco housing demand. The type of demand for San Francisco housing by downtown workers depends on their incomes and their housing preferences. In general, people prefer to live near their places of work to minimize the costs and lengths of their commutes. This is particularly true for lower-income wage earners. In addition, central city housing has increased in appeal to many people, especially young, childless professionals who work downtown. Not all of the people employed in San Francisco as a result of the proposed project would seek housing in the City, however, as some would prefer the suburbs, some would have already established residence outside the City in households with others who work closer to home and some could not afford to live in the City. Some potential project employees may already live in the City, but do not work, or currently work outside the City.

The formula used by the Department of City Planning to determine the housing need generated by new office space assumes that 40 percent of the total number of persons employed in the project were to live in San Francisco, that each household would consist of 1.8 persons employed downtown, and that a minimum of 400 square feet per dwelling unit per employed person would be required. Under this formula the project would generate a need for 231 units./4/

Housing affordability is determined by a number of factors, usually in some combination, such as the number of potential buyers in a household and the income level of each, housing preferences, existing equity and savings and access to credit, and general housing market and economy considerations, including housing supply and quality and the cost of financing.

Published information on office workers in the Bay Area indicates the annual salary for support personnel ranges from $7,800 to $26,000 and that for clerical personnel ranges from $7,800 to $30,000./5/ Salary information on professional occupations is not available and there is no published information on income levels for employees specifically in San Francisco. Additionally, information is not available on the average percent of employees by category or the number of workers per household by job classification.

Financial institutions are currently allowing 35 percent of a buyer's gross monthly income for mortgage payments. Information from the San Francisco Board of Realtors shows that the average selling price of a home in the City in 1981 is $151,200./6/ The sales price of homes sold in the week of October 1, 1981, ranged from $95,000 to $236,750. At an interest rate of 18 percent, a 20 percent down payment and a loan term of 30 years, monthly payments of $1,800.00 would be required for a dwelling selling for $151,200.

Daon Corporation has entered into an obligation to support financially the development of 158 residential units at Harkness House, the former Harkness and Southern Pacific Hospital at Fell and Lyon Streets, which is projected to be remodeled for housing for the elderly. The unit credit which Daon will obtain for these Harkness House units would be applied to the 135 Main Street project./7/ The means of providing the additional required units had not been determined by the project sponsor by December 18, 1981./8/

FISCAL EFFECTS

Revenues to the City

In 1984, the proposed project would have a replacement value of approximately $50,000,000./9/ Based on the 1980-81 non-bond tax rate of $4 per $100 of the

assessed value (25 percent of market value), the project would generate approximately $500,000 in non-bond property tax revenues. The building would also generate property tax revenues to retire bonded indebtedness. The tax rate at which these revenues would be generated in 1984 would depend on the amount of principal and interest payments due in that year and the total assessed value of property in San Francisco. At the 1980-81 rate of $0.92 per $100 of assessed value, the project would yield $115,000 in bond repayment revenues. The total property tax revenues of $615,000 would be distributed as shown in Table 6, assuming the same distribution as in the 1980-81 fiscal year.

Payroll taxes would be paid to the City General Fund on the earnings of approximately 1,000 of the projected employees of the project. The remainder would be exempt from the tax either because they work for banks and insurance companies, which are not required to pay San Francisco payroll taxes, because they work for small, retail tenants with tax liabilities of less than $500, or because they would be owners of businesses, who are also exempt. Based on a 1981 average wage of $24,600 for Downtown office workers and a payroll tax rate of 1.1 percent, payroll tax revenues from the project would be about $270,600.

TABLE 6: PROJECTED DISTRIBUTION OF PROPERTY TAX REVENUES FROM THE PROJECT, 1984*

	Percent	Revenues**
City and County of San Francisco	84.60	$ 520,290
Schools	8.15	50,123
Bay Area Air Pollution Control District	0.17	1,045
BART	7.08	43,542
TOTAL	100.00	$ 615,000

*Based on 1980-81 fiscal year distribution. Includes revenues to retire bond indebtedness.
**Based on an estimated value of $50,000,000.

SOURCE: San Francisco Tax Collector's Office; Environmental Science Associates, Inc.

It is estimated that the average Downtown office worker in San Francisco would make taxable expenditures of about $1,070 a year, in 1981 dollars, in the Downtown area./10/ Sales tax revenues allocated to the City and County of San Francisco are one percent of all taxable sales purchased by project employees which would be about $11,500. In addition, employees at the project site would generate about $6,300 by the half-cent transit sales tax. Of that amount, $4,700 would go to BART directly and the remaining $1,600 would be distributed by the Metropolitan Transportation Commission among BART, Muni and AC Transit.

The project would generate an estimated $24,500 in utility user's tax revenues to the City General Fund./11/

The owners of the project would pay a 0.22 percent gross receipts tax on their rental income. It is estimated that total annual rental income for the project in 1984 would be $7,200,000 (1981 dollars)./12/ Gross receipts tax revenues therefore would be about $15,840.

General Fund revenues from the non-BART sales tax, payroll tax, utility user's tax, gross receipts and non-bond property tax for the City and County of San Francisco would total about $937,000 (1981 dollars) if the project is completed in 1984. The net increase in revenues to the General Fund that would result from the project would be $897,000.

These revenue estimates are based on tax rates and fees in effect in mid-1981. Estimates of receipts from the payroll tax and gross receipts tax would increase by about 36 percent if the Proposition Q, approved by the voters in June 1980 is fully implemented. This proposition was approved by less than a two-thirds majority of the voters and its validity is under litigation to determine if it would constitute a special tax requiring a two-thirds vote of approval under Proposition 13 to become effective.

MUNI

The General Fund of the City provides a subsidy to the operating budget of the Municipal Railway which covers the difference between Muni costs and the

revenue Muni receives from fares and from federal and state sources. This subsidy represents the cost of Muni to the City. The average deficit per ride in 1981-82 is estimated to be $0.39./13/ Assuming that 29 percent of the employees on the site at present ride Muni to and from work, the existing General Fund subsidy to Muni required by on-site employees is about $4,000 per year. If the 1981-82 subsidy were the same in 1984 and 29 percent of the project employees would ride Muni to and from work, the project would create a General Fund subsidy to Muni of about $57,000. The project would help pay for the Muni deficit through its revenue contributions to the General Fund. In 1980-81, ten percent of discretionary General Fund revenues were allocated to Muni. If this percentage were to remain constant, the project would generate about $89,700 in General Fund revenues to Muni in 1985. This subsidy is probably understated because it includes only those workers who would use Muni as their primary mode of transportation and excludes those who use a combination of transportation modes such as Muni and Southern Pacific. (Although Muni costs are expected to increase at the general rate of inflation, the property value of the project for taxing purposes would increase by only two percent per year due to the limitations of Article XIIIA of the State Constitution (Proposition B), thereby reducing its proportionate tax contribution over time to the total costs of Muni.)

On April 27, 1981, the Board of Supervisors approved a proposal to assess new downtown office developments to help pay for Muni, including capital costs. The program calls for creating a downtown assessment district in which a one-time fee of up to $5.00 per gross square foot would be levied on new office space. The fee program has been legally challenged, but if it were to become effective, and the maximum of $5.00 per square foot were established as the fee, the project would generate about $1,325,000 for the one-time Muni fee.

BART

BART fares cover about 40 percent of BART costs. For each BART passenger trip an average of $1.00 is paid by fares, and an additional $1.50 in costs must be supported by some other revenue source. Over 86 percent of this additional cost is supported by the special BART half-cent sales tax.

It is estimated that about 15 percent of the employees who occupy the existing buildings ride BART to work./14/ The estimated annual costs to BART that are not covered by these riders' fares are $7,900. BART's revenues from the sales tax generated by existing employees is about $335 per year. Assuming the 1981 deficit per rider would be the same in 1985 and that 15 percent of project employees would ride BART to work, the project would generate a deficit of about $113,000 per year./16/

NOTES - Employment, Housing and Fiscal Factors

/1/ F. Cutshall, President, Johnson Printing Plates Company, telephone communication, November 5, 1981.

/2/ An employment multiplier of 1.18 was derived from San Francisco Bay Area Input-Output Model, 1967 and 1974, Cooperative Extension Service, University of California, Berkeley, July, 1978.

/3/ A construction multiplier of 1.55 was derived from the San Francisco Bay Area Input-Output Model, 1967 and 1974, Cooperative Extension Service, University of California, Berkeley, July, 1978.

/4/ This formula is based on a memorandum by Dean Macris, Director of Planning, Housing Requirement for Office Development in San Francisco, July 20, 1981. The formula is expressed as:

$$\frac{\text{Gross Square Feet of Office Space}}{250} \times .22 = \text{Number of Housing Units Required}$$

/5/ U.S. Department of Labor Statistics, March 1981, "Area Wage Survey for the San Francisco - Oakland, CA, Metropolitan Area."

/6/ San Francisco Board of Realtors, October 5, 1981, "Multiple Sales Service." This information includes all homes sold from February 11, 1981, to October 1, 1981.

/7/ Dean Macris, Director of Planning, written communication, May 15, 1981. This letter is on file at the Office of Environmental Review, 45 Hyde Street, Room 319.

/8/ Stephen Swire, Daon Corporation, telephone communication, November 9, 1981.

/9/ Ian Stuart, Daon Corporation, personal communication, August 17, 1981.

/10/ Taxable expenditures within the central business district per office worker is based on $715 per year in 1974 (SPUR op. cit. p. 262). Between 1974 and 1981, average weekly earnings of finance, insurance, real estate and service workers rose nationally by about 50 percent.

/11/ Utility user's tax revenues were calculated as follows, using 1981 utility rates:

(a) water: 185,175 cubic feet per 1 year x $0.00414 per cubic feet x $0.05 tax = $38 per year.

(b) gas: 4,000 therms per year x $0.34779 per therm x $0.05 tax = $66 per year.

(c) electricity: 3,300,000 kwh per year x $0.045 per kwh x $0.05 tax = $7,425 per year.

(d) telephone: 140,000 square feet x $1.40 per square feet x $0.05 tax = $16,800

TOTAL: $24,329

SOURCE: Flack & Kurtz Associates, TRACE Computer Model, July 23, 1981, and Environmental Science Associates, Inc.

/12/ Daon Corporation, August 18, 1981.

/13/ Bruce Bernard, Muni Chief Accountant, oral communication, October 28, 1981. Based on 1981-82 Muni net operating cost of $142,139,000, and net revenues of $87,833,000. Assuming the 1979 revenue passenger number of 139 million would be applicable in 1981, the average general fund deficit per ride would be $0.39. However, there has not been any update of the ridership number since 1979, therefore, the deficit per ride of $0.39 is estimated.

/14/ Office of Environmental Review (OER), "Guidelines for Environmental Evaluation - Transportation Impacts", October 1980.

/15/ 1,070 employees x 15 percent ride BART x 468 rides per year x $1.50 = 113,000.

E. TRANSPORTATION

As the growth of Downtown San Francisco continues, City policies are being formulated and implemented to limit the provision of long-term parking, and hence the use of the automobile Downtown. Public transit is expected to meet a larger proportion of the new travel demand than it has in the past. Implicit in the public transit analyses discussed in this Section is a secondary effect of the proposed projects on transit, i.e., that automobile travel to and from the new projects, using public parking, would displace some prior users of public parking who would then travel on public transit.

The intersection of Mission and Main Streets, at the northwest corner of the block containing the proposed project, would become a focal point of vehicular trips into the City from the Bay Bridge and James Lick Freeway, of Muni bus routes on Mission and Main Streets, and of many new pedestrian trips from new developments in the area. This report includes in the analyses of vehicular and pedestrian traffic consideration of their conflicts at intersections.

TRAVEL DEMAND

Table 7 shows estimates of future trips to the area caused by projects already in the construction phase, by the proposed 135 Main Street office building, and by other proposed developments./1/ Presently under construction are the Federal Reserve Bank, the 150 Spear Street Building, and the Pacific Gateway Building. Proposed are buildings at Mission and Main Streets, 101 Mission Street, 201 Spear Street, and the Spear-Main Building on the parcel to the south of the site. The floor areas and parking spaces of these buildings are shown in Table 4, page 52.

TABLE 7: ESTIMATED PEAK-HOUR PERSON-TRIPS FOR PROJECTS PROPOSED AND UNDER CONSTRUCTION IN THE SITE AREA

Buildings	Retail (sq. ft.)	Office (sq. ft.)	Peak-Hour Person-Trips
Under construction*	12,350	1,284,500	4,600
135 Main Street	7,500	256,500	960
Other proposed developments**	9,270	1,036,260	3,700

* Buildings in this category are the Federal Reserve Bank, the 150 Spear Street Building, and the Pacific Gateway Building.
**Includes 101 Mission Street, Mission-Main, 201 Spear Street, and Spear-Main Building.

It is unlikely that the present proportion of persons traveling by each mode will remain applicable in the future. Traffic service levels approaching F on major routes into the City,/2/ "transit first" transportation policies such as

limitations on parking, and rising fuel costs are factors which are expected to tend to shift travel from automobiles to transit. Policy 4 of Objective 1 of the Downtown Transportation Plan of the Transportation Element of the Master Plan states that "a basic premise of the Transportation Element is that all additions to the commuter load as a result of job growth in the City should be accommodated by public transit."

The Transportation Element contains measures which seek to discourage the provision of long-term parking in the downtown area. With an increased demand for public parking expected to result from approved projects to be completed by 1984, the existing vacancies (7 percent) among public parking spaces in the area would be effectively removed by that year. Peak-hour travel by mode for the project and other developments is shown in Table 8. Many of the new commuters to and from these projects who would wish to travel by automobile would be able to get access to the area from the freeways and Bay Bridge and to find public parking spaces off-site, but in so doing would displace others

TABLE 8: ESTIMATED PEAK-HOUR PERSON-TRIPS BY TRAVEL MODE

Mode	Percent by Mode*	Projects Under Construction**	135 Main Project	Other Proposed Developments**	Total
Automobile	36	1,650	340	1,330	1,670
Muni	29	1,130	280	1,070	1,350
BART	15	690	140	560	700
A/C	8	370	80	280	360
SamTrans	2	90	20	70	90
SPRR	4	180	40	150	190
GGT	5	230	50	190	240
Ferry	1	50	10	40	50
Other	3	140	30	110	140
					4,790

* Based on Attachment I, Transportation Guidelines, OER. Multi-mode trips cause the total to exceed 100%.
**Listed in Table 7, page 79.

who would then use transit. Therefore, concurrent with the new travel demand created by these projects, and due principally to it, there would be a general shift to public transit use from automobile use downtown. The total effect would be a small increase in vehicle trips and a greater increase in transit use as shown in Table 9. The basis of Table 9 is discussed further in Appendix A-1, page 139.

TABLE 9: TOTAL EFFECT, WITH LIMITATIONS ON AUTOMOBILE USE, OF PROPOSED DEVELOPMENTS ON PEAK-HOUR TRAVEL DEMAND

Mode	135 Main Project	Other Proposed Developments	Total
Automobile	40	150	190
Muni	420	1,610	2,030
BART	200	780	980
A/C	110	420	530
SamTrans	50	180	230
SPRR	70	260	330
GGT	90	340	430
Ferry	15	55	70
Other	30	110	140
			4,930*

*The difference between Table 8 and Table 9 is due to rounding, and to a projected increase in multi-mode trips.

TRANSIT

The 40 Muni lines with stops within 2,000 feet of the site are expected to carry about 20,000 outbound p.m. peak hour trips in 1984./3/ New Muni patronage attributable to the project would number about 420 trips during the p.m. peak hour, and about 2,000 daily trips. In addition to new Muni trips which would begin or end at 135 Main Street, these estimates of project impacts on Muni include displaced automobile users from other buildings. The increase would be about two percent.

The Muni trips directly associated with the project, and estimated in Table 8, page 80, would number 280 during the p.m. peak hour and 1,400 daily. The 280 trips would represent about a 1.4 percent increase in Muni patronage in 1984 on the affected lines.

New peak-hour trips attributable to the project on other modes of transit are also shown in Table 8, page 80. These estimated new trips would total 535 and would represent a one percent increase in travel on the regional carriers. Of these trips, at least 340 would be generated directly by 135 Main Street.

Cumulative Impacts

As shown in Tables 8 and 9, pages 80 and 81, it is estimated that peak-hour travel on the 40 affected Muni lines would increase by about 3,400 trips during the peak hour, a volume numerically equivalent to 46 motor coaches loaded to a recommended maximum capacity of 72 persons. This would represent about a 20 percent increase in ridership on those lines. Of the affected lines, the most notable increase would be on routes now served by lines 9, 11, 12, 14, 14GL, and 14X on Mission Street, which would carry about 575 new trips from cumulative development in the area./4/ The present Muni five-year plan shows an expected 22 percent reduction in p.m. peak-hour capacity on those lines to about 3,000 trips. It is anticipated that increased capacity on the Muni Metro lines and a provision to allow the use of the Muni Fast Pass on BART would allow this reduction of bus service on Mission Street.

PEDESTRIANS

Most peak-hour pedestrian traffic generated by the project to and from the north would be oriented toward the Embarcadero subway station or Muni bus stops on Market Street. Muni stops on Mission Street would also attract pedestrian trips./5/ The Transbay Terminal would be the walking destination of users of A/C Transit, some SamTrans routes, some Golden Gate Transit routes, and some Muni routes. Ferry riders would walk north to Mission Street and then east. Most users of the Southern Pacific Railroad would probably

ride the Muni 80X line to the Southern Pacific Terminal which is approximately 1.3 miles southwest of the site. Some parking would be available in the area, principally to the north, south, and west of the site. Most commuting parkers would be traveling as pedestrians in these directions.

Sidewalks will be provided on Mission Street in front of the Pacific Gateway Building when construction of that building, which is under way, is complete. Crosswalks across Mission and Main Streets will be added to the west and south sides of this intersection where none exist at present./6/ The 135 Main Street project would increase pedestrian flow in the Mission Street crosswalk on the east side of Main Street about 14 percent above that which will be present after buildings now under construction (see Table 4, page 52) are in place. There would be a four percent increase in the green time needed to accommodate eastbound and westbound vehicular and pedestrian traffic on Mission Street.

Figure 26 shows the existing demand on sidewalk capacities at the Mission-Main intersection. Figure 27 shows the estimated demand on pedestrian flow capacity at the Mission-Main intersection after projects under construction (see Table 4, page 52) are in place. Figure 28, page 85, shows the estimated level of demand with the addition of the project. Figure 29, page 85, shows the estimated cumulative demand on pedestrian capacity which could result upon completion of the other proposed projects listed in Table 4, page 52. The additional volumes would result in flows in the north crosswalk on Mission Street which would require about 90 percent of the available green signal time on Mission Street to clear the intersection. Pedestrians would require 20 seconds to clear the longest segment of the new crosswalk across Main Street on the south side of Mission Street. With the existing timing of 35 seconds of green time for Mission Street traffic, only about 15 seconds would be available to enter the crosswalk. As a result, the flow capacity of that new crosswalk would be less than the demand.

A network of walkways is expected to exist within the project block after development there is complete. The network would reduce the pedestrian flow on some sidewalk segments. Because block-to-block travel requires the use of crosswalks, flow at the crosswalks would not be reduced by the interior block walkways.

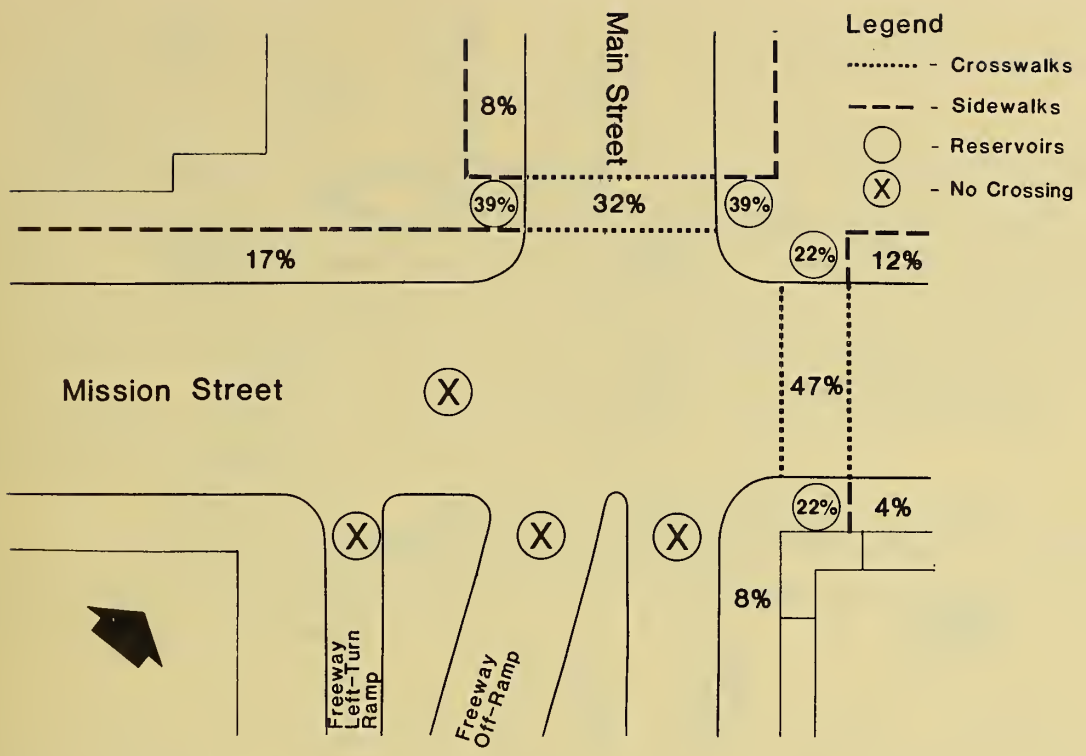


FIGURE 26: Existing Pedestrian Flows as a Percent of Capacity at the Mission/Main Intersection, P.M. Peak Hour

NOTE: The width of the island between the free-way off ramp and the freeway left-turn ramp is shown approximately as planned rather than as existing.

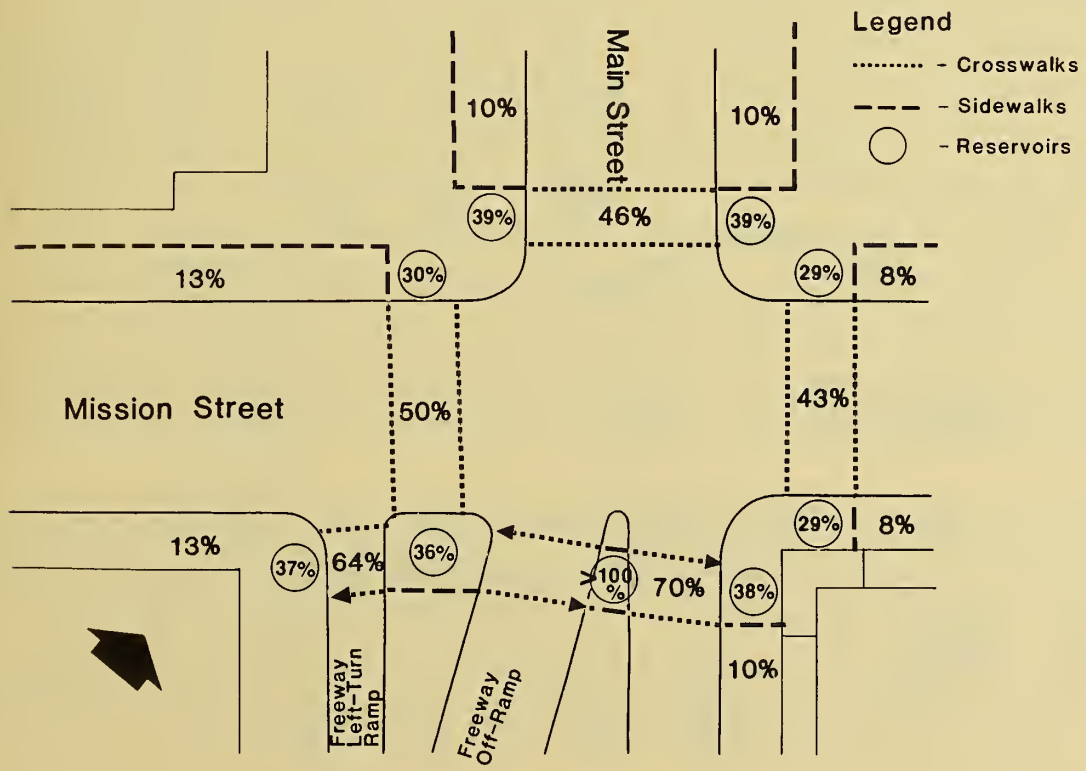


FIGURE 27: Pedestrian Flows as a Percent of Capacity at the Mission/Main Intersection Upon Completion of Buildings Under Construction, P.M. Peak Hour

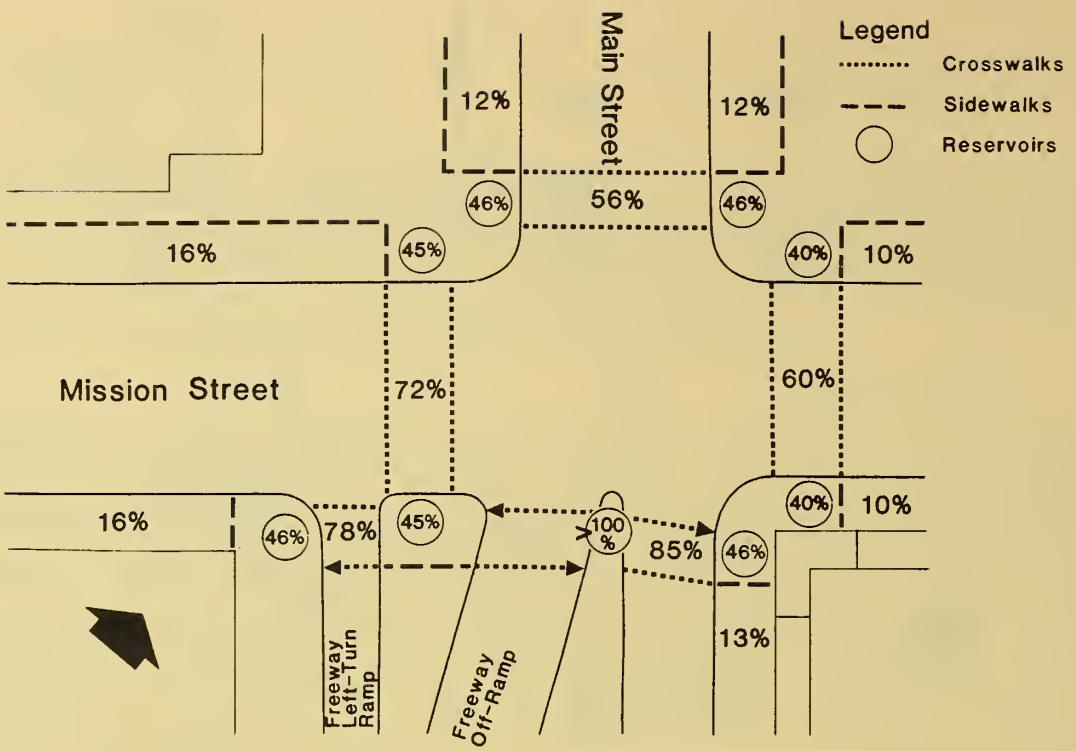


FIGURE 28: Pedestrian Flows as a Percent of Capacity at the Mission/Main Intersection Upon Completion of the Project, P.M. Peak Hour

NOTE: The width of the island between the free-way off ramp and the freeway left-turn ramp is shown approximately as planned rather than as existing.

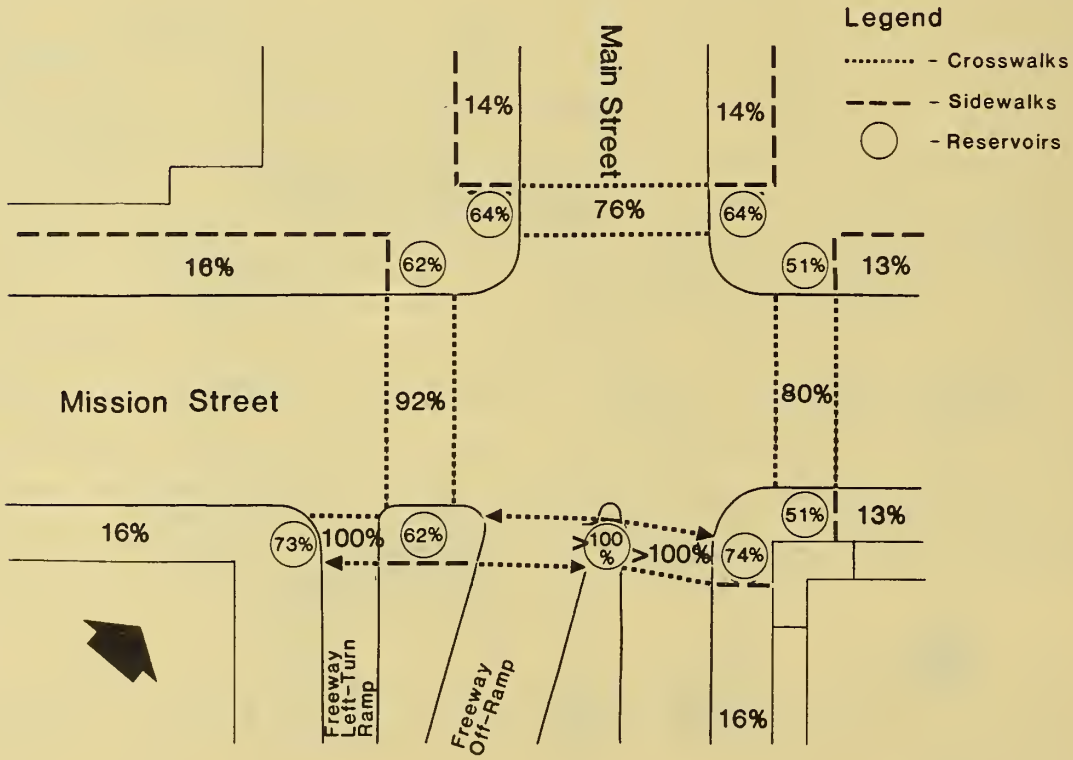


FIGURE 29: Pedestrian Flows as a Percent of Capacity at the Mission/Main Intersection Upon Completion of the Project and Other Buildings Under Review, P.M. Peak Hour

The sidewalk space on the corners at the Mission-Main intersection where pedestrians wait for a green signal would experience periods of heavy loading. During peak demand periods almost 74 percent of the reservoir space at the Main Street crosswalk on the south side of Mission Street would be used at the end of the crossing wait period, when standing pedestrians would be constrained. Under this condition pedestrians would be uncomfortably close and movements through the group would be restricted.

Other crosswalks and sidewalks in the area would be affected to a lesser extent by development in the area. No problems with accommodating flow at them are foreseen.

The Department of City Planning has proposed that east-west pedestrian walkways within the project block and in Assessor's Block 3719 to the west, bounded by Fremont, Beale, Mission, and Howard Streets, be connected by a similar walkway across the intervening Assessor's Block 3718 under the freeway ramps south of the Pacific Gateway building which is now being constructed.

The proposed alignment of the new walkway in Assessor's Block 3718 would not form a straight line, but would connect non-aligned walkways on Block 3719 and the project block (3717) by a curved path. On the project block, the walkway would be between the proposed Spear-Main building and the existing Kemper Building on the southwest corner of the block. A mid-block crosswalk across Main Street (three traffic lanes) is therefore proposed at that location. Similarly, there would be a walkway between Beale and Fremont Streets, just opposite the restaurant adjacent to the nose of the Beale Street on-ramp. The proposed location of the mid-block crosswalk across Beale Street (two traffic lanes) is just south of the walkway, between it and the Transbay Terminal ramp.

The walking distance between the proposed new crosswalk across Main Street, and the corner of Mission and Fremont Streets, would be about 12 to 25 percent less on the proposed new walkway than on the alternative routes via the intersections of Main Street with Mission or Howard Streets. The walkway, therefore, could be expected to attract many of the pedestrian trips which

originate south of the proposed Main Street crosswalk and along both sides of Main and Spear Streets. (About 1,000 pedestrians per hour use the sidewalk on the east side of Main Street in the project block now.) However, it would not attract trips from buildings along Mission Street, such as the proposed Mission-Main building, or the recently approved building at 101 Mission Street. Few trips from the proposed project at 135 Main Street would use the walkway unless congestion in crosswalks at the Mission-Main intersection would cause a diversion to the proposed new walkway.

Main, Beale,, and Fremont Streets are transit streets, but signalization of the proposed new crosswalks, interlocked with existing upstream signals on these one-way streets, would avoid most of the potential for delay of transit vehicles which would otherwise exist. Other vehicles turning into Main Street from Howard Street, or into Beale Street from Mission Street, would be briefly delayed.

PRIVATE PASSENGER VEHICLES

Assuming a daily short-term parking turnover rate of four vehicles per parking space, there would be about 175 trips per day into and out of the project garage, of which about 15 trips would occur during the peak hours. With the three lanes on Main Street averaging about 720 peak hour trips in 1981, and operating at only about 10 to 15 percent of capacity during the peak hour, there would be no capacity problems posed by project-generated trips on Main Street in the project block.

As the driveway to the parking area would be over 90 feet long, it is not likely that queues on the down ramp to the parking area would be long enough to block the sidewalk. During peak traffic hours, outbound cars from the garage (about ten per hour) could proceed onto the street with an average delay at the curb of less than ten seconds. The sidewalk would be blocked less than one percent of the time./7/

Most trips created by the project (see Table 9, page 81) would be diverted to transit as discussed above. Not uncommonly, transit trips begin or end as automobile trips. The new transit trips shown in Table 9 would result in additional demand for parking at transit terminals outside the city. Parking may not be available in sufficient quantity at some outlying terminals.

Automobile trips associated with the project would be made principally to and from public parking elsewhere in the area as shown in Figure 16, page 41. At most, these trips would number about 240 during the p.m. peak hour (340 person trips at a vehicle occupancy of 1.4); but almost all of these would displace other persons from automobile use requiring public parking, so that there would be almost no net effect on traffic in the area caused by the project.

Table 10 shows estimated capacities during the p.m. peak period at the Mission-Beale, Mission-Main, Mission-Spear, and Howard-Main intersections. For the a.m. period the Mission-Main intersection is also shown, as that is the peak hour for the Main Street freeway off-ramp. At none of the intersections analyzed would the vehicle or pedestrian volumes generated by the 135 Main Street project have a significant effect on capacity.

Cumulative vehicular and pedestrian traffic would degrade service levels at all of the intersections shown in Table 10. In general, over 50 percent of the cumulative demand on green time would be from pedestrian traffic. After cumulative development, all intersections would provide service levels of E or F during the p.m. peak. Vehicular demand could be reduced at Main and Mission Streets to an estimated 46 percent of available green time by the elimination of left turns to Main Street from Mission Street eastbound. However, approximately 90 percent of the time would be needed for the concurrent pedestrian crossing movements. This left-turn volume could be diverted around the project block via right turns at Spear and Howard Streets, could use Folsom Street instead of Mission Street, or could continue east to Steuart Street. Service levels at the intersections along these routes would be degraded by less than ten percent by this adjustment.

TABLE 10: VEHICULAR LEVELS OF SERVICE AT INTERSECTIONS IN THE VICINITY OF 135 MAIN STREET (MOST CONGESTED LANES)*

	MISSION-BEALE	MISSION-MAIN		MISSION-SPEAR	MISSION-HOWARD
	PM	PM	AM	PM	PM
Existing**	(F) 1.09	(F) 1.09	(F) 1.07	(E) 1.00	(E) 0.91
With development under construction**	(F) 1.16	(F) 1.16	(F) 1.14	(F) 1.06	(E) 1.00
With 135 Main**	(F) 1.16	(F) 1.19	(F) 1.17	(F) 1.12	(F) 1.05
With other projects (cumulative)**	(F) 1.19	(F) 1.37	(F) 1.36	(F) 1.27	(F) 1.13
Cumulative without eastbound left turn at Mission-Main**	Not Applicable	(E) 0.91	(E) 0.91	(F) 1.07	(F) 1.10

*Numbers show the minimum percentage of the existing green time required to accommodate the vehicular and pedestrian traffic. Service levels are defined in Appendix A-5, page 144. Typically, the most congested lanes are turning lanes.
**Eastbound and Westbound phase.
***Northbound and/or Southbound phase.

Parking

No on-street parking would be removed by the project. Access to the 22 off-street parking spaces in the building would be at the south end of the building on Main Street via a two-way ramp 15.5 feet wide on a 13 percent grade. One wide space adjacent to the elevators would be provided for exclusive use by handicapped individuals. A six-bicycle rack would be provided in the parking area. The small number of spaces to be provided, in comparison with demand, is consistent with the overall policy of the Transportation Element of the Master Plan of minimizing automobile use in the core area, although no parking is required by the City Planning Code in the C-3-O district.

Based on the estimate that 1,060 persons would be employed on the site and on the trip generation rates and travel mode assumptions shown in Table 8, page 80, parking demand would be for 360 spaces of which 270 would be long-term and 90 short-term. Currently available parking in the area is approximately 1,100 spaces. By 1984 available parking will have diminished as the result of the increased demand caused by approved projects which will be completed by then. It is unlikely that the overflow parking demand generated by the project could be entirely accommodated by public parking in the area in that year.

Loading and Unloading

Two loading docks for vans and trucks would be located off Main Street on the west side of the building at street level. One loading dock would be recessed within an enclosed stall approximately 38 feet long and 12 feet wide on the north side of the building; the other, 25 feet long and 12 feet wide, would be in an unenclosed area on the south side of the building. The north side dock would have direct access to a freight elevator which would serve the entire building. A van loading area, located in the basement parking area, would also have direct access to the freight elevator. Curb cuts approximately 13 feet long would provide access to each street level loading space. The van loading area would be accessible via the ramp leading to the basement parking area at the southern side of the building. The street level loading facilities conform to the requirements of number, area, arrangement, and access, of Sections 154 and 155 of the City Planning Code. The basement van loading area would have a restricted height clearance of eight feet. The Department of City Planning has estimated that a total of three spaces, would be required to meet the average hourly demand, although the Planning Code presently requires two. Curbside space would be used, if properly marked, when the loading docks are in use or when easily moved goods are loaded.

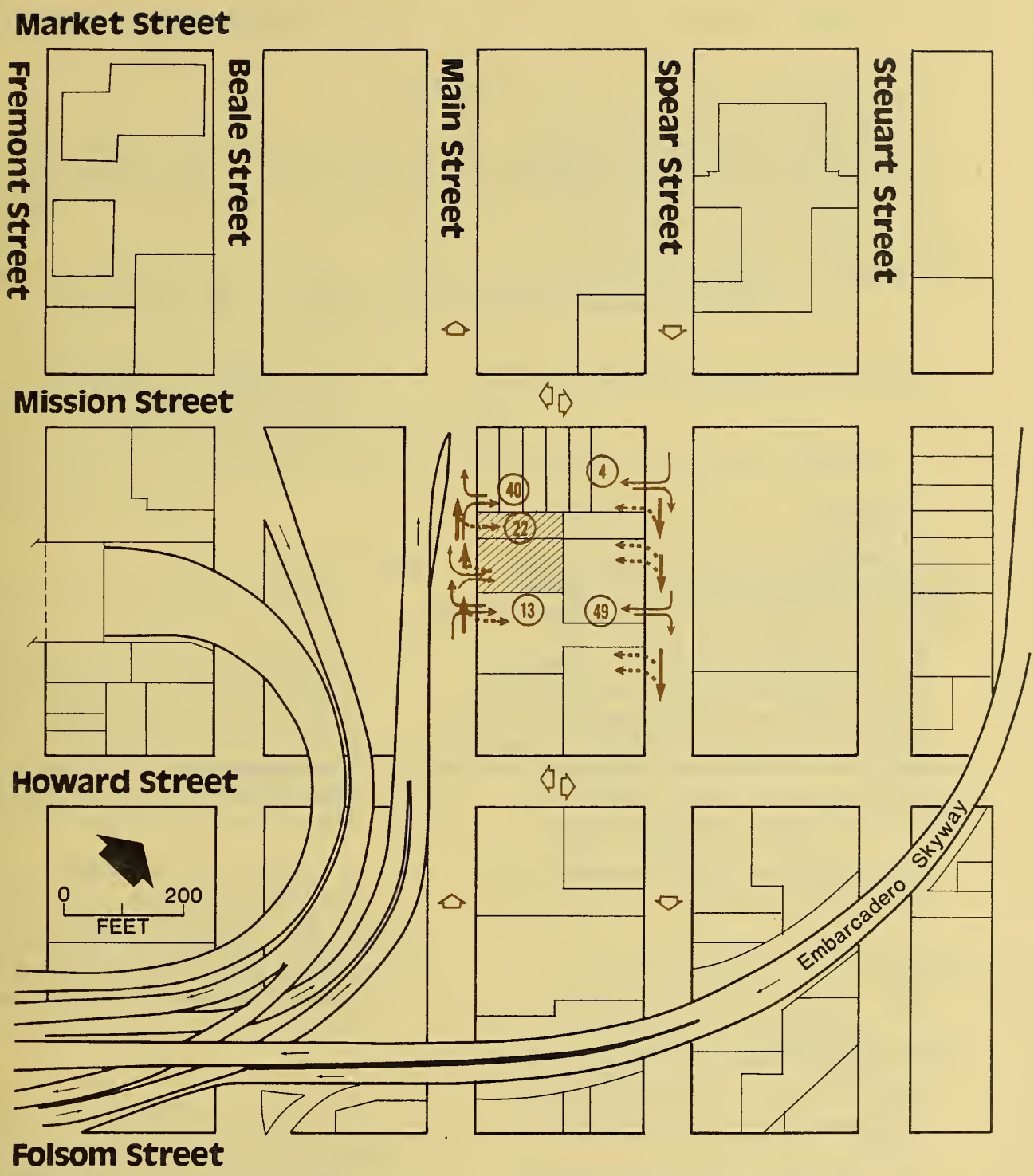
Tractor-trailer combinations, which are typically 55 feet in length, would project beyond the loading space into sidewalk pedestrian flow on Main Street. Tractor-trailer deliveries, however, would be uncommon and would be

limited to moving vans and some deliveries of heavy office equipment and furniture. More common delivery vehicles are single-unit trucks (typically less than 40 feet) and vans. Both types would fit into the principal loading dock with no sidewalk overhang. Vans would also fit into the basement loading area.

Truck access to the project is shown on Figure 30. Most maneuvers would involve trucks backing across the sidewalk. During heavy pedestrian flow, docking time would increase somewhat. The backing maneuvers of single unit trucks of a 35-to-40-foot length require a cleared area in front of the stall of nearly 45 feet. Two of the three traffic lanes on Main Street would be blocked during each maneuver of such trucks, as would the sidewalk. A truck greater than 40 feet in length would block some or all of the sidewalk.

Section 155(h) of the Planning Code requires that the frequency and width of curb cuts be such that on-street parking spaces are maintained and conflicts with transit and pedestrian movements are minimized. The location of curb cuts in the project block upon completion of all proposed projects are shown in Appendix A-6, page 145. Project curb cuts would extend across 30 percent of the building frontage.

Although Main Street is designated a major thoroughfare in the Transportation Element of the Master Plan, traffic volumes in the project block are light (Level of Service A). Double parking by trucks and service vehicles would have little impact on Main Street traffic flow, as only one of the three traffic lanes would be blocked. If the existing on-street loading zone were retained, blocking of traffic lanes would not be expected to occur. If double parking occurred, the two remaining lanes would each then carry about 360 vehicles during the p.m. peak hour, which is about 20 percent of the capacity of a lane.



Legend

- Project Location
- Backing Truck Movement
- Access/Egress Movement to Parking and/or Unloading Area with Manuvering Room
- Direction of Traffic
- (46) Parking Spaces

Figure 30:

Access to Off-Street Loading Docks

TRANSPORTATION ELEMENT OF THE MASTER PLAN

The Transportation Element of the San Francisco Master Plan states City objectives and policies pertaining to transportation. The relationship between these policies and the proposed project are summarized in Table 11.

TABLE 11: RELATIONSHIP BETWEEN THE PROJECT AND APPLICABLE OBJECTIVES AND POLICIES OF THE TRANSPORTATION ELEMENT OF THE MASTER PLAN

APPLICABLE TRANSPORTATION POLICIES	RELATIONSHIP OF PROJECT TO APPLICABLE POLICIES
A. General Objectives and Policies	
Objective 1: Meet the needs of all residents and visitors for safe, convenient, and inexpensive travel within San Francisco and between the City and other parts of the Region.	
1. Policy 6: Develop a financing system for transportation in which funds may be allocated without unnecessary restriction for priority improvements according to established policies.	If implemented, San Francisco Ordinance #224-81, establishing a Transit Impact Development Fee, would enable the City to assess the project for the transit impacts considered attributable to the project.
2. Policy 7: Seek means to reduce peak travel demand.	A transportation management plan for the development is contained in the mitigation section of this report, which would have the effect of shifting some of the travel demand to off-peak hours.
B. Thoroughfares Plan	
Objective 3: Provide safe and pleasant space for pedestrians.	
3. Policy 3: Ensure convenient and safe pedestrian crossings.	The project would contribute substantially to improvements in pedestrian flows in the 100 block of Main Street. Present sidewalks would be repaved and maintained with an additional north-south walkway added to the interior of the block.

As the Mission and Main Streets intersection is a convergence point for both vehicles and pedestrians, the large amount of flow to be generated by development in the area, including the proposed project, would find insufficient capacity there, given the present configuration.

C. Downtown Transportation Plan

Objective 1: Maintain the type and level of transportation facilities and services appropriate to enhance the economic vitality of the Downtown business and shopping district.

4. Policy 1: Improve the downtown pedestrian circulation system, especially within the downtown core.

Developments in the project block would include primary north-south and east-west walkways providing direct passage through the block. Other walkways from the block exterior will enhance access to the primary walkways.

5. Policy 4: Discourage the addition of new long-term parking spaces in and around Downtown.

The sponsor intends to make some of the 22 spaces proposed in the basement parking area available to office tenants without restrictions on length of daily use.

6. Policy 7: Encourage the private sector to provide additional pedestrian space in new developments.

The 135 Main Street project would include a partially enclosed public courtyard on Main Street. The mid-block walkway would be incorporated into a glass-covered garden.

Objective 3: Improve facilities for freight deliveries and business services.

7. Policy 1: Require off-street facilities for freight loading and service vehicles in all major new developments and seek opportunities for new facilities for old buildings.

The project would have off-street loading facilities meeting the requirements of the City Planning Code.

8. Policy 2: Encourage consolidation of freight deliveries and nighttime deliveries to produce greater efficiency and reduce congestion.	A transportation management plan is under consideration as a mitigation (see Section V, page 114). Freight deliveries would be an element of the plan.
9. Policy 3: Provide short-term loading spaces on the street for small deliveries and essential services, with strict enforcement.	Existing loading space on the street may be retained, subject to review by the Traffic Engineering Division of the Department of Public Works.
10. Policy 4: Prohibit new sidewalk elevators in high pedestrian use areas.	The project would have none. Two existing elevators would be removed.
D. Citywide Parking Plan	
Objective 3: Provide convenient and safe parking facilities for bicycles.	
11. Policy 2: Provide bicycle parking facilities in major new construction, such as office buildings, shopping and medical centers, and residential complexes.	Approximately 100 square feet would be provided for bicycle parking in the subsurface parking garage.

DEMOLITION, EXCAVATION, AND CONSTRUCTION

Traffic flow along Main Street would be altered during the construction period by truck traffic into and out of the site. The sidewalk area would be enclosed by a construction fence and a temporary pedestrian way would be located in the east parking lane of Main Street, subject to approval by the Department of Public Works. An average of 20 truck-trips per day would be needed to haul demolition and excavation debris to a fill area at Sierra Point, south of Candlestick Park./8/ Loading of haul trucks would occur within the construction site. Construction over a 20-month period would require approximately 6,600 truck-trips, averaging 15 trips per day. Except for some brief blockage of all lanes by backing trailer trucks, lane capacity on Main Street would be unimpaired.

Off-site parking for workers would be arranged for by the contractor. Commonly, a facility is leased or reimbursement of worker parking costs is arranged. In any case, demand for parking in the area would increase temporarily.

NOTES - Circulation and Parking

/1/ Trip generation rates by floor area, for various uses, have been compiled by the Department of City Planning in Guidelines for Environmental Evaluation -- Transportation Impacts, October 1980. Office space and retail space are estimated to generate, respectively, 17.5 and 80 daily person trips per 1,000 square feet. As about 20 percent of daily office trips occur during the p.m. peak hour, the peak hour trip generation rate is 3.5 trips per 1,000 square feet. For retail space, the peak hour trip generation rate is eight trips per 1,000 square feet.

/2/ Vehicular Levels of Service are defined in Appendix A-5, page 144.

/3/ The 40 affected Muni lines are the 1, 1X, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 14, 14GL, 14X, 15, 17X, 21, 27, 31, 31X, 38, 38L, 38 AX, 38BX, 40, 41, 42, 45, 55, 61, J, K, L, M, N, 71, 72, 76, and 80X. The estimated volume includes that generated by the three projects now under construction in the area.

/4/ This estimate was made by distributing projected Muni trips to the 40 lines within 2,000 feet of the site in proportion to patronage on each line as estimated from data compiled by the Office of Environmental Review in Guidelines for Environmental Evaluation -- Transportations Impacts, October, 1980.

/5/ Projected pedestrian trips were assigned to Muni stops near the site in proportion to the Downtown patronage on the 40 lines which have stops within the area.

/6/ City Planning Commission Resolution No. 8378 required the Pacific Gateway developer to make certain crosswalk improvements. These have been specified by the Department of Public Works in an agreement with the developers.

/7/ Based on the method for capacity analysis of unsignalized "T" intersections given in Transportation Research Board, 1980, Circular 212, Interim Materials on Highway Capacity.

/8/ Jeffrey D. Recob, Project Manager, Swinerton and Walberg Co., telephone communication, August 12, 1981.

F. CONSTRUCTION NOISE

Project construction would occur in three stages: demolition, excavation, and construction of new buildings. Throughout the 20-month construction period, trucks would be visiting the site, initially hauling away dirt and debris and then bringing materials. These activities would temporarily increase noise levels in the surrounding area.

During construction all powered equipment, other than impact tools, would have to comply with the San Francisco Noise Ordinance requirement of a sound level of not more than 80 dBA at 100 feet. If a second piece of equipment is used concurrently with the first it would add about 3 dBA, making the level about 83 dBA at 100 feet. The ordinance also prohibits construction work at night from 8 p.m. to 7 a.m., if the noise emission from such work exceeds the ambient noise level by 5 dBA at the property line, unless a special permit is authorized by the San Francisco Department of Public Works. During construction, many types of equipment are used. Typical demolition and construction noise levels anticipated for this project are shown in Table 12.

TABLE 12: TYPICAL COMMERCIAL/INDUSTRIAL CONSTRUCTION NOISE LEVELS AT 50 FEET

Construction Phase	Average Noise Level
Ground clearning	84 dBA
Excavation	89
Foundations	78
Erection	85
Finishing	89

SOURCE: Bolt, Beranek, and Newman, December 31, 1971, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, U.S. Environmental Protection Agency, p. 20.

During the 12 weeks of clearance and excavation, noise levels inside the office building now under construction at 150 Spear Street would reach as high as 76 dBA with windows closed. Noise levels this high result in intermittent communication requiring raised voices at distances greater than two feet, and

restrict telephone use to a marginal level./1/ Dilation of pupils, increased pulse pressure and heart rate, and pulse volume changes have been observed in humans exposed to noise levels of approximately 70 dBA./2/ These are indicative of a general stress reaction. General physiological distress produced by noise can add to the overall stress of life and in this way contribute to the incidence of nonauditory disease./3/

Project construction would require up to 10 weeks of foundation preparation and piledriving. Significant noise impacts would result during piledriving. Conventional unmuffled and unshielded pile drivers emit noise levels of 105 dBA at a distance of 50 feet each time the driver strikes the pile. The quietest impact piledriver measured by the City generated noise levels of 98 dBA at 50 feet, but is not always compatible with construction requirements./4/

Assuming noise emissions of 105 dBA at 50 feet, and a 6 dBA decrease with each doubling of distance, piledriving would be audible to people on the streets within 1,000 feet of the project site where not shielded by intervening buildings. Noise levels as high as 88 dBA would be expected in the 150 Spear Street office building when piles are driven. During these intermittent noise intrusions, only minimal communication would be possible. Shouting would be required at two to three feet and telephone communication capabilities would be eliminated. Repeated impulse and intermittent sounds of high level (above 70 dBA) appear more likely to disrupt performance than continuous or steady sounds of comparable level./1/ Observations in humans have shown that in response to brief sounds over about 70 dBA there is a general constriction in the peripheral blood vessels reducing peripheral blood flow; an acceleration or deceleration of heart rate; changes in breathing patterns; motility of the gastro-intestinal tract; change in the size of the pupils, and saliva and gastric secretions./3/ Flexion, a voluntary muscle reaction in response to sudden noise, shows varying degrees of diminution with repetition of sound./1/ These physiological changes are often regarded as an emergency reaction of the body, increasing the effectiveness of any muscular exertion which may be required. However desirable in emergencies, these changes are not desirable for long periods since they could interfere with other necessary activities./5/

The Department of Public Works requires "state of the art" noise control devices during construction on all projects. However, all projects exceed the Noise Ordinance standard of 80 dBA at 100 feet during piledriving. The lowest dBA sound achieved is in the high 80s at the 100-foot range. Actual noise emissions are dependent upon soil characteristics, the type of piles, the method of driving, and the type of equipment used.

The Department also analyzes the impacts of piledriving for every project and frequently requires staggered hours for piledriving. The most frequent requirement in commercial areas is from 1 p.m. to 9 p.m. All measures imposed by the Department are negotiable and are subject to revision during construction should circumstances require new action./2/

It should be noted that simultaneous construction may occur on up to three other sites within the same block. Simultaneous construction would be expected to increase the resultant construction noise levels in the area by as much as 3 dBA above the total generated by this project.

NOTES - Construction Noise

/1/ U.S. Department of Health, Education, and Welfare, Health Services and Mental Health Administration, 1972, Occupational Exposure to Noise.

/2/ U.S. Environmental Protection Agency, 1971, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances (NTID 300.1).

/3/ Central Institute for the Deaf, 1971, Effects of Noise on People, for the U.S. Environmental Protection Agency, Office of Noise Abatement and Control.

/4/ Ray McDonald, Chief Building Inspector, Bureau of Building Inspection, Department of Public Works, July 6, 1981, telephone communication.

/5/ Marcus M. Key, et al., June 1977, Occupational Disease - A Guide to Their Recognition, U.S. Department of Health, Education, and Welfare.

G. AIR QUALITY

At the Beale, Main, and Spear Street intersections with Mission Street, development and project impacts on sidewalk CO levels were calculated for 1983 and 1984 using peak hour traffic volumes according to methods recommended by the BAAQMD./1/ The results of these calculations are shown in Table 13.

TABLE 13: PROJECTED WORST-CASE CUMULATIVE SIDEWALK CARBON MONOXIDE CONCENTRATION IMPACTS AT MAJOR INTERSECTIONS NEAR THE PROJECT* IN PARTS PER MILLION (P.P.M.)

	Existing 1981	With Projects Under Construction 1983	Percent of Change From 1981	Plus Other Proposed Projects 1984	Percent of Change From 1981	With 135 Main 1984
1-Hour Concentration**						
Ambient level	13.3	10.2	-0.23	9.9	-0.26	9.9
Beale Street (south of Mission)	19.1	15.2	-0.26	15.2	-0.22	15.2
Main Street (south of Mission)	20.6	16.5	-0.20	16.4	-0.20	16.4
Mission Street (west of Spear)	17.4	13.7	-0.21	13.6	-0.22	13.7
8-Hour Concentration**						
Ambient level	7.9	6.1	-0.23	5.7	-0.28	5.7
Beale Street (south of Mission)	9.5	7.8	-0.18	7.7	-0.19	7.7
Main Street (south of Mission)	9.9	8.3	-0.16	8.2	-0.17	8.2
Mission Street (west of Spear)	9.0	7.3	-0.19	7.1	-0.21	7.2

*Concentrations at the sidewalk adjacent to the heaviest traveled roadway segment were calculated at each intersection according to the BAAQMD Guidelines for Air Quality Impact Analysis at Projects, 1975, updated with 1981 ARB EMFAC6 emission factors. These methods assume worst-case meteorology and roadway configuration. The ambient or background level in 1981 was calculated as the 3-year average of the second highest annual concentrations. For 1983 and 1984, the background level was the 1981 value adjusted according to the regional emission projected for those years by the 1979 Bay Area Air Quality Plan.
**The 1-hour and 8-hour standards for carbon monoxide are 35 ppm and 9 ppm, respectively.

Project-generated traffic would contribute no more than a 0.1 parts-per-million (ppm) increase to the eight-hour and one-hour carbon monoxide concentrations in the project vicinity and would cause no violations of standards.

As indicated in Table 13, page 100, no violations of standards would be expected to occur in 1983, with all projects now under construction in place, or in 1984, with all planned development in place. Concentrations in 1983 and 1984 would be less than in 1981 because the effect of continued emissions control measures during this period would offset the increase in emissions from traffic.

Project-related emissions would arise from project-generated transportation and from building operations, space and water heating. Due to the energy-conserving design of the project, emissions of carbon monoxide, hydrocarbons, and oxidants from building operations would be relatively small, ranging from 1/92 to 1/900 of annual project-related emissions. Overall, transportation emissions would be low because the cumulative development-generated trips would be made predominantly by transit, rather than automobile.

Project-related emissions would increase slightly (less than 1/100 of a percent) above existing emissions in the San Francisco Bay Area Air Basin. Table 14 shows annual project-related emissions, development-related emissions, and regional emissions of hydrocarbons and nitrogen oxides, which are precusors of ozone, in 1984. Although small, cumulative emissions from this project and other development in the area would slightly impede attainment of the standards.

Neither the project nor other developments in the project vicinity would conflict directly with the control strategies of the Bay Area Air Quality Plan.

TABLE 14: ANNUAL PROJECT- AND CUMULATIVE DEVELOPMENT-GENERATED EMISSIONS (TONS PER YEAR), 1984

	Project		Cumulative Development		Regional Total
	Building Only	Building and Transportation	Buildings Only	Buildings and Transportation	
Carbon Monoxide	0.004	3.6	1.0	70	1,463,650
Hydro-carbon	0.002	0.7	0.4	8.0	292,000
Nitrogen Oxide	0.025	2.3	6.0	13.0	251,850

H. ENERGY

Pacific Gas and Electric Company (PG&E) would provide natural gas and electricity to the proposed project through its existing distribution systems. Traffic disruption resulting from utility connections probably would be limited to Main Street in front of the site and to minor trenching in Mission Street at Main Street. This work would require approximately two weeks./1/

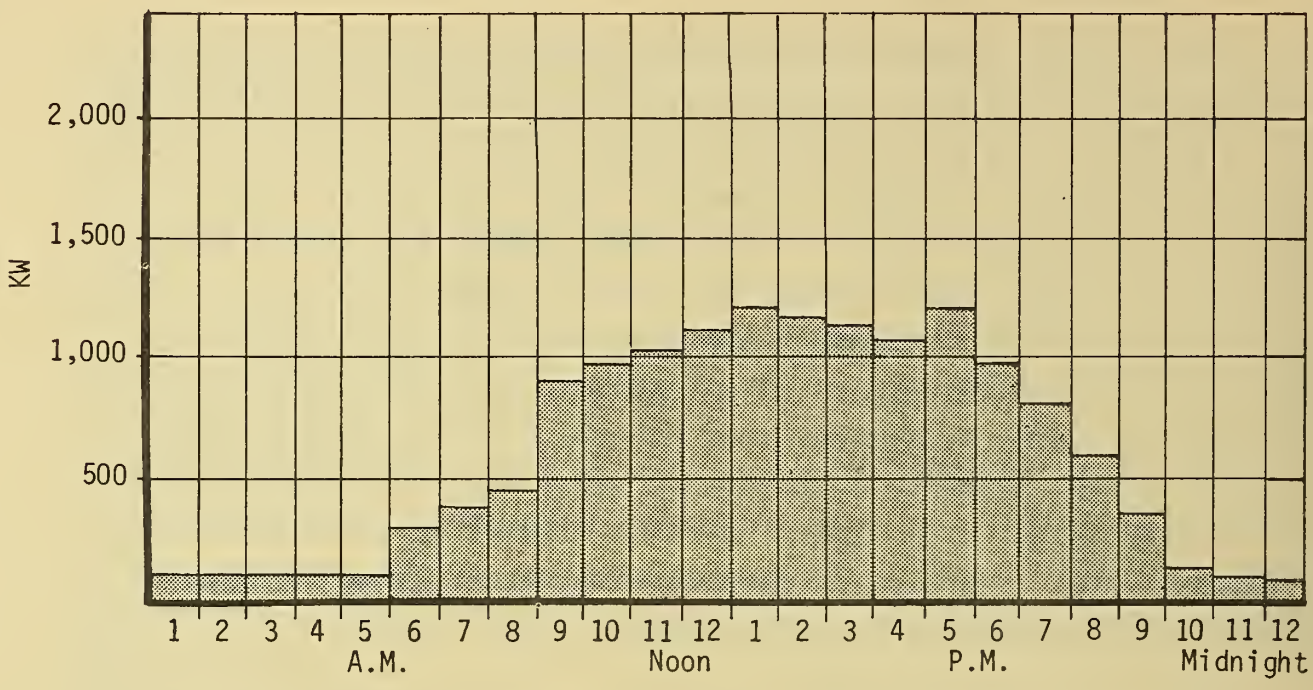
The project would require an unknown amount of energy for demolition of the existing structures, excavation, and the removal of the excavated materials and rubble to a disposal site. During construction, it is estimated that about 31,000 gallons of vehicle fuel would be used, about 2.4 billion British Thermal Units (BTU) - at source./2/ The total amount of energy required for project construction, including the energy cost of fabricating and transporting building materials, would be about 420 billion Btu./3/

The structure is designed to exceed the minimum State energy efficiency standards by ten percent./4,5/ Space-heating would be supplied by a natural gas-fired boiler; the hot water would be pumped to coils in fan-powered induction boxes in the ventilation system, which would recirculate heat from the lights before drawing heat from the central boiler system. The ventilation system would be a variable-volume, time clock-controlled system with an economizer cycle that would take in outside air in excess of the minimum requirement when the outside air was of a desirable temperature; this would reduce air-conditioning. The air-conditioning system would be a central electric-driven chiller which would cool the variable volume ventilation air stream using chilled water pumped to coils in each zone of the structure. The lighting system fixtures would be fluorescent with parabolic reflectors and high efficiency ballasts, and could be automatically controlled to account for occupancy and the contribution of daylight from the windows. The elevator motors would be controlled with solid-state systems to reduce energy demand when not in use.

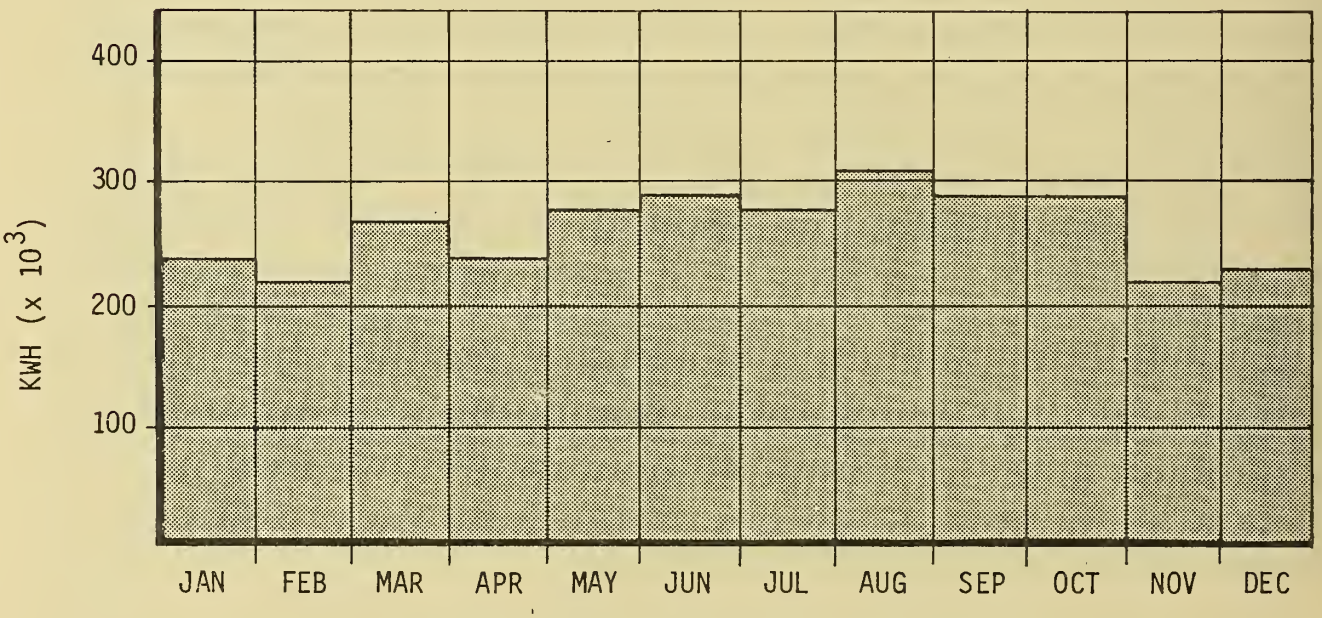
The energy system for the project was selected on the basis of lowest life-cycle cost. A comparison by the project engineer between electric resistance space heating and natural gas-fired hydronic space heating showed the gas-fired system to be more economical. A comparison between natural gas water heating, solar water heating, and electric resistance water heating indicated that the electric system would be most economical. A comparison between single- and double-glazed windows showed that single glazing would allow more heat to leave the building, increasing natural gas concumption for space heating by 3,085 Btu per square foot annually while decreasing consumption of electricity for air conditioning by 1,819 Btu per square foot annually. Single glazing would be more desirable because electricity demand for the project would be about four percent less overall, and the project demand during the PG&E daily system-wide peak electricity demand period would be less. The building would make extensive use of natural lighting, and the applicant intends to offer automatic dimmer light control for perimeter office lights on a cost-sharing basis. This would reduce the lighting requirement for perimeter offices by about 44 percent./6/

The operation of the structure would require about 3.2 million kilowatt hours of electric energy per year, used primarily for ventilation and cooling. (See Table 15, page 108) This would be about the same amount of electricity as is used by 1,000 average residential customers in San Francisco./7/ The structure would have a connected kilowatt load of approximately 3,500 KW and would have an average monthly consumption of about 0.25 million kilowatt-hours, or about 1.1 kilowatt-hours per square foot per month. For comparison, 12 high-rise structures which have been the subject of recent EIRs/8/ have an average consumption of 17 kilowatt hours per square foot per year, while the project would use 13 kilowatt hours per square foot per year. Daily electricity demand and annual electricity consumption curves are shown in Figure 31. Peak consumption is shown as occurring on August afternoons; this would coincide with PG&E's system-wide peak demand period.

The project would require about 1.2 million cubic feet of natural gas per year used primarily for space heating and water heating (see Table 15, page 108). This would be about the same amount of natural gas as is used annually by eleven average residential customers in San Francisco./7/ This would be an average of about 100,000 cubic feet of natural gas per month, or about 13 BTU per square foot per day. For comparison, 11 high-rise structures which have been the subject of recent EIRs have a predicted average natural gas consumption of 30 cubic feet per square foot per year while the project would have an average of 4.8 cubic feet per square foot per year. Daily natural gas demand and annual natural gas consumption curves are shown in Figure 32. Peak consumption of 0.4 million BTU's per hour would occur on weekdays in January. The peak demand for natural gas would occur between 8 a.m. and noon and would not coincide with the PG&E systemwide peak demand which occurs in the early evening hours in January. The above-described energy demand represents an increase in the energy used at this site. The existing energy use amounts to about eight percent of the estimated project use.



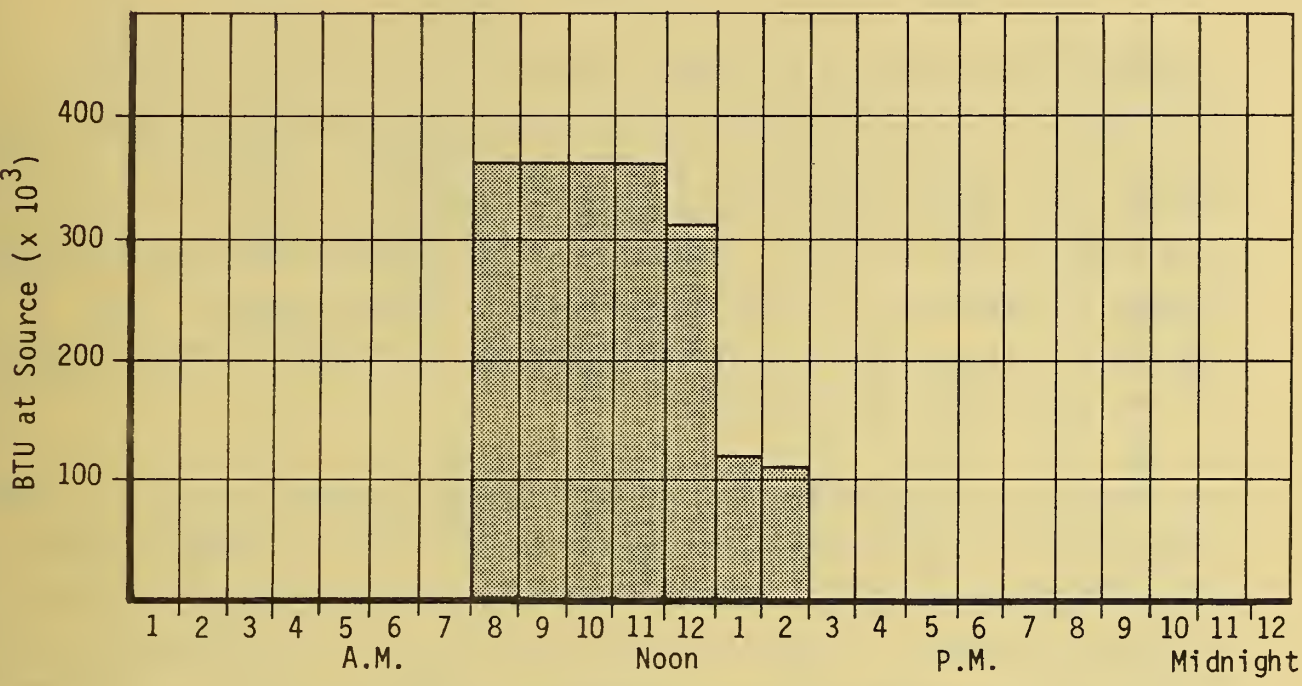
Daily Electrical Demand, Peak Summer Month (August)



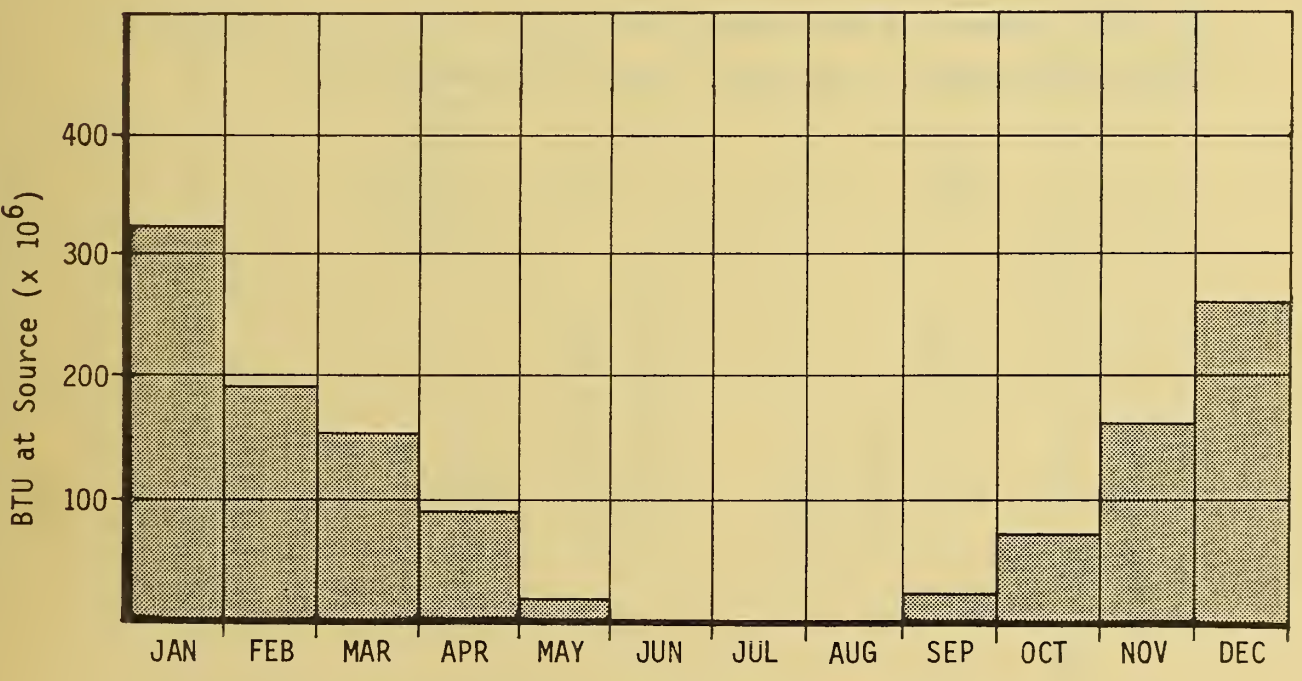
Average Monthly Electrical Consumption

SOURCE: Flack and Kurtz Group

Figure 31: Projected Electrical Load and Distribution



Peak Day Demand of Natural Gas, (January)



Average Monthly Consumption of Natural Gas

SOURCE: Flack and Kurtz Group

Figure 32: Projected Natural Gas Demand and Distribution

Transportation energy use for workers traveling to and from the project is estimated to be about 31,000 gallons of diesel fuel per year (for bus and S.P. rail traffic), 16,000 gallons of gasoline per year (for automobile and ferry traffic), and two million kilowatt hours of electricity per year (for light rail traffic) (see Table 15). Virtually all of the above described increased demands for energy would be met by nonrenewable energy resources. The applicant is not proposing recycling or the use of renewable energy resources for the operation of this structure.

The cumulative impact of the project and other developments proposed or under construction in the vicinity would amount to 26 million kilowatt hours of electricity per year and 99 million cubic feet of natural gas per year for building operation. The cumulative transportation effects would amount to the consumption of 300,000 gallons of diesel fuel, 170,000 gallons of gasoline and 19 million kilowatt hours of electricity per year (see Table 15).

The energy aspects of the project have been discussed with the Energy Conservation Bureau of the Public Utilities Commission./8/

TABLE 15: PROPOSED ANNUAL USE OF NONRENEWABLE ENERGY RESOURCES, 135 MAIN STREET*

	Project			Cumulative**		
	Amount	Billion BTU at Source	Percent	Amount	Billion BTU at Source	Percent
Building Operation						
Electricity	3.3 million KWH	34	54	26 million KHW	270	42
Natural Gas	1.2 million cu.ft.	1.4	2	99 million cu.ft.	110	17
Transportation						
Diesel Fuel	31,000 gal.	5	8	300,000 gal.	48	7
Gasoline	16,000 gal.	2.3	4	170,000 gal.	24	4
Electricity	2.0 million KWH	20	32	19 million KWH	190	30
		63	100		640	100

*The data in this table is rounded to two significant digits; therefore, the BTU columns do not add exactly to the totals shown.
**There are no data available for building operation energy for 150 Spear, 201 Spear, and Mission-Main at this time.

NOTES - Energy

/1/ George G. Pavana, Industrial Power Engineer, PG&E, telephone communication, November 16, 1981.

/2/ BTU, British Thermal Units, is a unit for measuring energy. Technically, it is the quantity of heat required to raise the temperature of 1 pound of water 1 degree F at sea level. The term 'at source' means that adjustments have been made in the calculation of the BTU energy equivalent to account for losses in energy which occur during generation and transmission of the various forms of energy as specified in: California Energy Resources Conservation and Development Commission, (ERCDC), 1977, Energy Conservation Design Manual for New Nonresidential Buildings, Sacramento, CA; and Apostolos, J.A., W.R. Shoemaker, and E.C. Shirley, 1978, Energy and Transportation, Sacramento, CA (Project 20-7, Task 8).

/3/ Hannon et al, "Energy and Labor in the Construction Sector", November 24, 1978, Science, Vol. 202.

/4/ State energy efficiency standards are described in Energy Resources Conservation and Development Commission, 1980, Conservation Regulations Establishing Energy Conservation Standards for New Nonresidential Buildings (Sections 1451-1542 of Title 20 and Section T20-1451 through T20-1542 of Title 24 of the California Administrative Code).

/5/ John McGovern, Flack & Kurtz Consulting Engineers, telephone comminication, July 31, 1981.

/6/ John McGovern, Flack & Kurtz Consulting Engineers, letter communication, November 10, 1981. This letter is on file with the Office of Environmental Review and is available for public inspection.

/7/ This estimate is based on energy consumption data in ERCDC, 1976, Quarterly Fuel and Energy Summary, Vol. 2, Nos. 1 and 2.

/8/ The buildings included 101 Montgomery, 595 Market, 180 Montgomery, Howard-Main, YBC Convention Center, Pacific Gateway, Federal Reserve Bank, Daon (Battery and Sacramento), Five Fremont, 101 Mission, Spear-Main, Post-Kearny, 456 Montgomery.

/9/ Flint Nelson, Director, Energy Conservation Bureau, Public Utilities Commission, personal communication, August 21, 1981

I. GEOLOGY, SEISMOLOGY, AND HYDROLOGY

GEOLOGY

The project would require excavation to accommodate the basement-level parking and mechanical vault areas. Excavation would extend 11 to 14 feet below the street grade over the entire site. Up to 5,000 cubic yards of material would be removed./1/ Excavated material would be artificial fill. The removal of

spoils from the site could cause silt and sand to spill in the streets along haul routes if trucks are not properly loaded. Such street dirt would be a safety hazard to motorists, bicyclists, and pedestrians, and would cause siltation in storm drains and be a source of dust.

The building would be supported on precast concrete piles driven down to the dense sands below Bay mud. The piles would support the structure by friction with surrounding geologic materials. (Piles driven down to bedrock were rejected for economic reasons. Minor amounts of settlement may occur after project construction, caused by consolidation of the old bay silts and clays (San Antonio Formation). Settlements for columns under heavy load would be about 1.5 inches; settlements for columns under light loads, on the eastern portion of the site, would be about 0.25 inches. Thus, differential settlement over the entire structure would be about 1.25 inches. Structural columns would be interconnected, which would tend to decrease the amount of differential settlement./1/

The relative instability of the artificial fill would necessitate shoring and bracing in pit walls. Should geologic materials be unstable, a possible hazard exists in the excavation pit during construction. If unshored, exposed free faces of the pit wall could slump into the pit, posing hazards to workers and possibly damaging construction and surrounding buildings. Even when shored, excavation below adjacent foundations may cause the surrounding ground surface to settle should the shoring system yield, possibly damaging adjacent buildings.

Vibrations generated during pile driving operations may damage nearby buildings with shallow foundations. The extent of damage depends on the stability of the surrounding foundations, the amount of force used to drive the piles, and the duration of the pile driving.

SEISMOLOGY

In addition to a pile foundation, the project would incorporate a moment-resisting steel frame./2/ The project would also have to be

constructed in accordance with the San Francisco Building Code and the Uniform Building Code. Performance of the building during an earthquake has not been determined, although buildings of this type would probably not collapse during a major earthquake. However, structural damage may occur, and loose objects, such as bookcases and furniture may topple.

A pile foundation would resist seismic hazards due to liquefaction and settlement. However, up to one-half inch of settlement could occur in the basement level, which is not structurally supported. Local streets may buckle or crack, and water mains and utility lines may break, which would leave the building without outside water, power, or telephone communication. Elevators may be rendered inoperable. The San Francisco Building Code requires that emergency water storage and a power generator be incorporated into new buildings. These would be located in the basement and on the mechanical floor.

HYDROLOGY

Dewatering would probably be required, although the extent of dewatering has not been estimated. After excavation, quantities of water to be removed would probably be low; the water level would probably recede to the level of the bay muds, which are relatively impervious. Special measures would be taken to retain the present water level if any adjoining buildings are dependent on wet wood piles; this is being investigated by the project soils consultant.

Should a major amount of dewatering be necessary, undesirable effects may result. Dewatering can produce settlement of the ground surface, causing surrounding buildings with shallow foundations to lean out of plumb, resulting in cracks in walls and floors tilted out of horizontal. Streets could develop swales, cracks, or "potholes". Underground utility lines may bend or break. Depending on the extent of dewatering, the Department of Public Works generally requires that a surety bond be posted before issuance of permission for excavation. The construction contractor would be held responsible for any damage that might result from dewatering. The temporary lowering of groundwater levels would probably not have a permanent impact on groundwater

conditions in the vicinity. Groundwater conditions would probably return to normal following cessation of dewatering. Seepage may be a problem in that portion of the basement which extends below the groundwater level.

The project would not have any impact on runoff from the site, as the amount of impervious surface would not change.

NOTES - Geology, Seismology, and Hydrology

/1/ John P. Rutigliano, Structural Engineer, Johnson Rutigliano, personal communication, July 10, 1981.

/2/ A moment-resisting frame is a type of frame construction that emphasizes the strength of the connections between vertical columns and horizontal beams in order to resist lateral forces such as those imposed by earthquakes or high winds.

J. GROWTH INDUCEMENT

The project would add 248,000 net leasable square feet of office space to the Downtown core area of San Francisco and would remove about 30,000 square feet of commercial service and light industrial space. Employment at the site would increase by about 985 persons. Office occupants are unknown but could include tenants who would relocate from other San Francisco locations, tenants who relocate from outside San Francisco, and new firms. The total increase in employment at the project site would not necessarily represent employment that is totally new to San Francisco.

The growth represented by the project would be in response to the continuing demand for office space in the Financial District of San Francisco. The project location reflects the trend toward meeting this demand south of Market Street. This demand would exist whether or not the proposed project is built. The demand for office space continues the trend of growth in service sector and headquarters office activities and employment. This increase in Downtown office space and employment would contribute to the continued growth of local and regional markets for goods, services and housing.

It is expected that many downtown workers would desire to live in San Francisco. Employment growth, however, would not correspond directly to increases in demand for housing and City services, as some new jobs would be held by individuals who already live and work in the City, or who live in the City but who previously either did not work or worked outside the City, or by those who live in surrounding communities.

Any net increase in employment downtown would increase the demand for retail goods and food services in the area. The project would intensify this demand, which would be met, at least in part, by retail space proposed to be incorporated in the project.

Increases in employment downtown would also increase demand for business services, to the extent that the expanded space would not be occupied by firms providing those services. In response, demand would increase for existing space and possibly for further new development.

V. MITIGATION MEASURES

In the course of project planning, design, and coordination, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been or would be adopted by the project sponsor or their architects and contractors; some are still under consideration, and some have been rejected.

Each mitigation measure and its status is discussed briefly below. Where a measure has been rejected, the reasons for its rejection are also discussed. Where a measure is still under consideration, its implementation would be optional on the part of the project sponsor, architects, or future contractors, unless required by the City as a condition of project approval.

A. LAND USE AND ZONING

MEASURES PROPOSED AS PART OF THE PROJECT

- The project would provide a link in a mid-block pedestrian walkway recommended and requested by the Department of City Planning as part of a pedestrian network to provide pedestrian route alternatives which may be shorter and to relieve congestion on public sidewalks.

- The project would remove old sidewalk elevators, which are barriers to pedestrian movement when in use, and provide a pavement type on the street level that would relate the sidewalk, lobby and interior walkway and garden in a harmonious manner.

- The project would provide a covered three-story-high entrance courtyard open to Main Street, and a glass-covered, enclosed, wind-free rear garden area. Both areas would be landscaped and would provide passive recreational areas on the site for project occupants and the public.

B. VISUAL QUALITY AND URBAN DESIGN

MEASURES PROPOSED AS PART OF THE PROJECT

- The project would represent a transition in scale between taller 43-, 34-, 33-, and 25-story buildings to the north and northwest and 18-story and lower buildings to the southeast, in compliance with the height envelope intended by the Urban Design Plan and the implementing height limits established by the City Planning Code. The upper floor would be set back on the east side of the building to provide visual interest to the building profile.

C. HISTORICAL AND CULTURAL RESOURCES

MEASURE PROPOSED AS PART OF THE PROJECT

- Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

D. EMPLOYMENT, HOUSING, AND FISCAL FACTORS

MEASURES PROPOSED AS PART OF THE PROJECT

- Housing would be provided as finally determined to be required. Credit for 158 units being financed by the project sponsor at Harkness House, a residential facility for the elderly, would be applied to this project. Arrangements would be developed by the project sponsor to provide for the additional 80 units estimated to be required by the current housing-office space formula.

- The project sponsor would participate proportionately in whatever legal means is adopted finally by the Board of Supervisors to contribute funds for transit development and improvement to meet the peak demands caused by cumulative office development in the Downtown area.

E. CIRCULATION AND PARKING

MEASURES PROPOSED AS PART OF THE PROJECT

- The project sponsor and contractor would consult with the Traffic Engineering Division of the Department of Public Works to determine feasible traffic mitigation measures to be applied during the construction period.

- The project would provide safe and secure parking for bicycles and mopeds and for handicapped persons.

- Preferential parking would be provided for carpools and, vanpools. Garage clearances would accommodate standard-sized vans.

- Transit use by employees would be encouraged by the sale on-site of Muni Fast Passes and BART passes.

- A flexible time system for employee working hours would be encouraged by the project sponsor and management.

- A member of the building management staff would be designated as a "transportation broker" to implement the above mitigation measures as parts of a transportation management program.

- Within a year after completion of the project, the sponsor would conduct a survey, using a method approved by the Department of City Planning, to determine the actual trip generation, trip distribution, and modal split of project occupants, and actual pick-up and drop-off areas for carpoolers and vanpoolers. The results of this survey would be made available to the Department of City Planning. Alternatively, at the request of the Department of City Planning, the project sponsor would provide an in-lieu contribution for an overall transportation survey of the Downtown area to be conducted by the City.

- If required as part of an overall plan developed by Muni for the project block face, the project would be designed to affix eyebolts or similar fixtures to the building for the suspension of Muni overhead trolley wires. This would reduce the number of poles obstructing the sidewalk space on Main Street.

MEASURES UNDER CONSIDERATION

- Short-term traffic impacts due to street excavation during construction would be minimized by the project contractor by coordinating such work with construction contractors for nearby projects and with the utility agencies, if feasible.

- Prior to completion of full development of the block, the Traffic Engineering Division of the Department of Public Works would consider the prohibition of left turns from eastbound Mission Street to northbound Main Street. This measure would eliminate the need for additional green time for Mission Street traffic during the peak hour and pedestrian safety in the north crosswalk would be enhanced.

F. NOISE

MEASURES PROPOSED AS PART OF THE PROJECT

- The project sponsor and project contractor would meet with the Bureau of Engineering to determine necessary and feasible measures to reduce noise during the ten-week period that piledriving would occur and would agree to comply with any conditions required by the Bureau of Engineers.

- The project contractor would limit piledriving to the hours resulting in the least disturbance to neighboring uses. This may require a night work permit from the Department of Public Works.

- Holes for the piles would be predrilled to reduce noise impacts; the piles would be driven the rest of the distance required.

- The project contractor would comply with Section 2907(b) of the San Francisco Noise Ordinance which limits noise emissions from powered construction equipment to 80 dBA at a distance of 100 feet. The project contractor would also muffle intakes and exhausts, shield or shroud impact tools and use electric-powered rather than diesel-powered construction equipment, as feasible.

- A test piledriving program would be conducted to formulate criteria for the construction piledriving.

MEASURES UNDER CONSIDERATION

- Barriers up to 10 feet high would be built around the site, and around stationary equipment such as compressors, to reduce construction noise at the ground level by as much as 5 dBA.

- The project sponsor and contractor in cooperation with the Department of Public Works, would undertake an actual survey of the vicinity of the site to identify sensitive receptors as an aid in determining acceptable times for piledriving.

- The project contractor would locate stationary equipment in pit areas where feasible to serve as noise barriers.

G. AIR QUALITY

MEASURES PROPOSED AS PART OF THE PROJECT

- Indoor air quality in the office section of the project would be controlled by a mechanical ventilation system that would filter outside air and provide frequent changes of air.

MEASURES UNDER CONSIDERATION

- Strategies proposed for mitigating traffic congestion discussed in Section V.E of this report would also reduce emissions. Action would be initiated by the Department of Public Works or by the project sponsor.

H. ENERGY

MEASURES INCLUDED IN THE PROJECT

- The project would use a time clock-controlled heating and ventilation system with an economizer cycle to reduce the demand for air conditioning.

- The project sponsor would develop an energy conservation program for building tenants.

- The project would use high efficiency fluorescent lights, and individualized light switches where possible.

- The project sponsor would offer tenants of perimeter offices, on a cost-sharing basis, the option of automatic lighting dimmer control to decrease lighting requirements by about 44 percent through use of available natural light.

- The project would use high efficiency elevator controls.

MEASURES UNDER CONSIDERATION

- Provision of a storage area for recyclable materials (e.g. computer cards, paper, etc.) would be established if justified when tenants and tenant-needs are identified.

MEASURES REJECTED

- Use of solar collection panels to provide domestic hot water needs. This mitigation was rejected because a life-cycle cost comparison between solar and electric water heating showed the electrical system to be more economical.

- Natural gas water heating, rather than the electric resistance water heating system that was selected, was rejected because a life-cycle cost comparison indicated that electric resistance heating would be more economical.

- Double-paned windows were rejected because, while more space heating would be necessary for single-paved windows in the cooler months of the year, the increased heat loss during warmer months would decrease air-conditioning requirements during PG&E's system-wide electrical peaking periods.

- Operable windows were rejected because they would provide little benefit over the planned environmental control in the building and could result in inefficient operation of installed environmental control systems.

- Load shedding was rejected because no PG&E rate schedule now available would be available for the project when it begins operation. If a rate schedule becomes available in the future, the project could easily be modified to operate under such a schedule. Installation of controls at a later date would present no problem.

- Individual metering of office space was rejected because the costs are considered by the applicant to be excessive and the benefits uncertain. Ground-floor retail spaces would be individually metered.

I. GEOLOGY, SEISMICITY, AND HYDROLOGY

MEASURES PROPOSED AS PART OF THE PROJECT

- During excavation, the contractor would shore up and protect pit walls from lateral movement of soils into the pit.

- The project sponsor has had a geotechnical report prepared for the project by a licensed professional engineer, and the recommendations of that report for foundation design and site preparation would be followed in construction of the project.

- Piling holes would be predrilled to reduce noise and limit vibration.

- Portions of basement walls which extend below the groundwater level would be designed to limit seepage through the walls. The portion of the walls above the groundwater level would be moisture-proofed.

- Nearby buildings requiring underpinning during construction would be closely monitored to ensure no adverse effects during construction.

- Curbs, streets, and surrounding structures would be monitored during dewatering operations, if any, to ensure that settlement would not be occurring.

MEASURES UNDER CONSIDERATION

- If, in the judgment of the Department of Public Works, unacceptable subsidence occurs during construction, groundwater recharge would be begun by the general contractor to halt the settlement.

- Groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Department of Public Works to prevent sediment from entering the storm drain and sewer lines.

J. MEASURES IN INITIAL STUDY PERTAINING TO ISSUES WHICH WERE FOCUSSED OUT OF THIS EIR

- The project would provide internal security measures such as security guards, well-lighted entries, and alarm systems, to minimize the need for City policy services.

- During excavation, unpaved demolition and construction areas would be wetted to hold down dust; if this were done at least twice a day with complete coverage, particulate emissions (dust) would be reduced about 50 percent. Main Stree twould be swept by the project contractor to maintain it clear of spilled materials and dust and to minimize the hazard of siltation in the storm drain system serving the site.

- The general contractor would maintain and operate construction equipment so as to minimize exhaust emissions.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

VISUAL QUALITY AND URBAN DESIGN

The project would obstruct some views from nearby buildings. Portions of Main and Mission Street that are unshaded in the spring, summer, and fall months under existing conditions would be shaded by the project.

EMPLOYMENT, HOUSING, AND FISCAL FACTORS

The project would require demolition of approximately 36,000 gross square feet of office and light industrial space on the project site. Two tenants or owners would be displaced. The project would result in the construction of about 264,500 gross square feet of office and retail space, a net gain of 228,500 gross square feet of space on the site.

The project employees would generate a demand for about 231 dwelling units in San Francisco. According to a formula described by the Director of Planning on July 20, 1981. The project would accommodate approximately 1,070 jobs, an increase of approximately 995 on the site. City revenue from the site would be approximately 840 percent higher than from existing buildings.

CIRCULATION AND PARKING

The project would add directly about 230 person-trips on the Muni system during the p.m. peak hour, a 1.4 percent increase in Muni patronage and 340

trips to regional transit modes, a one percent increase. The project would increase pedestrian flow at the Mission-Main intersection. The cumulative capacity of an east-west crosswalk on the south side of Mission Street wpi;d be less than the demand. Cumulative vehicular and pedestrian traffic would degrade service levels at nearby intersections on Mission and Howard Streets.

NOISE

Noise impacts during construction would result principally from piledriving.

ENERGY

The project would require an increase in natural gas and electrical energy use on the site.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

A. NO PROJECT

This alternative would entail no physical change to the project site as it now exists. The two buildings which occupy the project site would remain, presumably in substantially the same condition that exists in 1981, although the printing firm would move as intended. (See Section III.A, page 21, for a discussion of the existing conditions.) The seismic safety of the buildings on the site would continue to pose a hazard to the extent that they do not comply with current codes.

In general, the environmental characteristics of this alternative would remain substantially as described in Section III of this report. With no project, existing structures on the site would be retained in their present condition. Present levels of traffic, parking demand, transit demand, air pollution, noise, energy consumption, on-site employment, and wind, shadow and visual effects now attributable to the buildings on the site would continue to exist. As the existing buildings cover almost 100 percent of the parcels, there would be no opportunity to extend an interior block walkway across the site.

This alternative would lessen employment-related effects identified in Section IV, D, page 71, as approximately 985 fewer people would be employed at the project site.

This alternative was rejected by the project sponsor because it would not fully utilize the potential usable space allowed at the site and would fail to provide a reasonable return on the investment potential of the site.

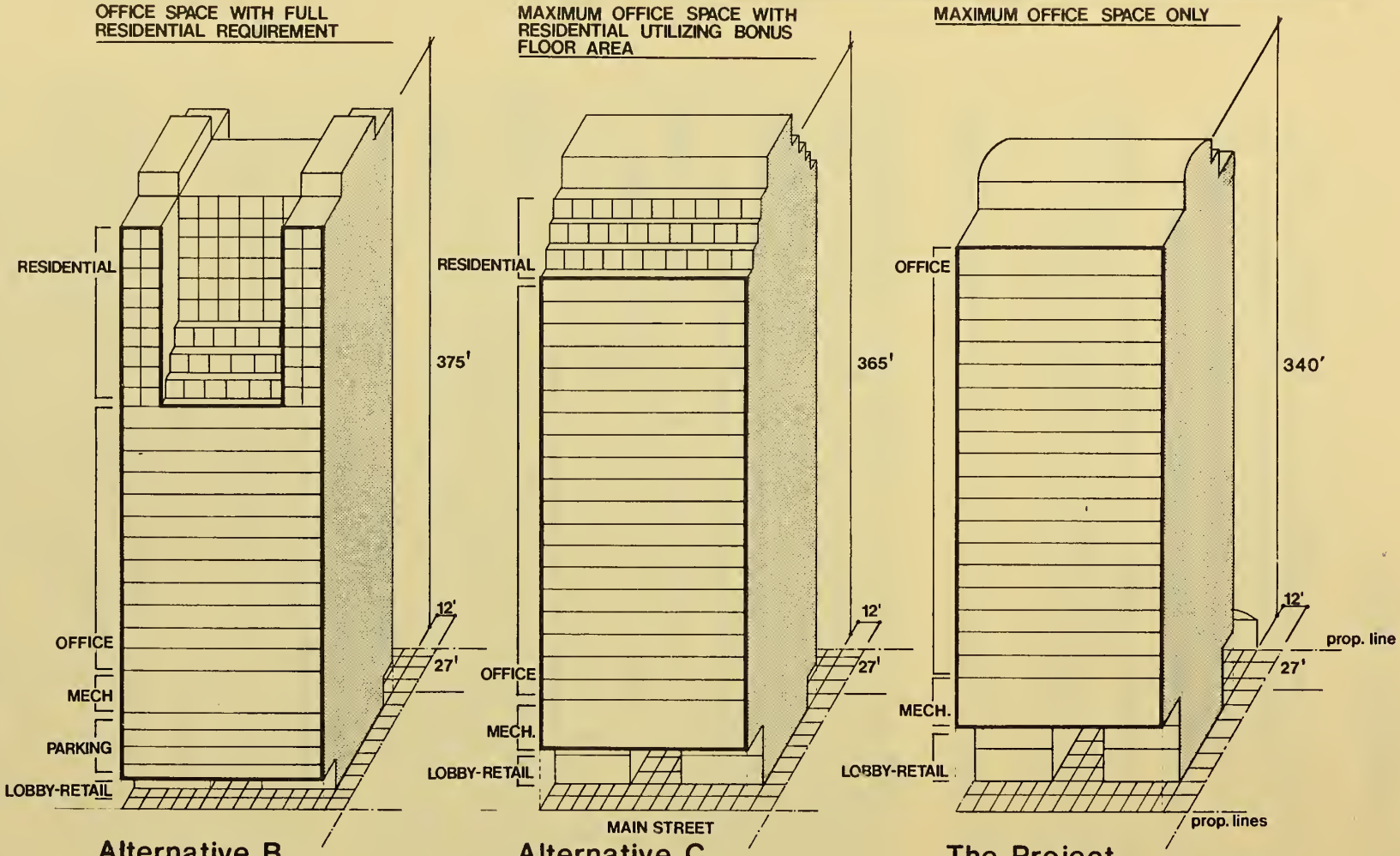
Aa. LOCATE THE PROJECT IN DOWNTOWN OAKLAND

The project sponsor is seeking to meet a portion of the demand for office space in San Francisco. A location in Downtown Oakland or elsewhere in the Bay Area would not meet this requirement. If such a project were located in Oakland it would receive environmental review by the City of Oakland as required for other new office projects there. As transportation and commute patterns are different from those in San Francisco, transportation and other impacts would be expected to be different from those in San Francisco.

B. FULL RESIDENTIAL REQUIREMENT PROVIDED ON THE SITE UNDER INTERIM CONTROLS

This alternative would provide on the site all of the housing required by the formula requiring 640 square feet of housing per 1,000 square feet of office space and .9 unit per 1,000 square feet of office space. Using allowable bonuses for building features associated with housing, the floor area could be increased by 30,000 square feet for a maximum total Floor Area Ratio of 15.9:1. In order to provide a balance between housing space and office space under the above formula, office space would be reduced from 260,000 gross square feet to 159,000 gross square feet, allowing for 135 dwelling units in 102,000 gross square feet. This would be the maximum number of dwelling units that could be accommodated under the allowable Floor Area Ratio. The building height would be increased by 35 feet to 375 feet, and setbacks would be required on the residential levels in front and in back to provide necessary window areas for residential rooms. See Figure 33.

This alternative would reduce the amount of office space in the building by approximately 100,000 square feet. On-site employment would be reduced by approximately 40 percent as would employment-related impacts such as traffic generation, transit demand, parking demand, housing demand, and energy consumption. These reductions would be offset, however, by the requirements and impacts of the housing units. A minimum of 34 parking spaces, at the ratio of one space for every four units required by Section 151 of the City Planning Code, would have to be supplied. This would require a two-story basement unless the moped, handicapped, and carpool and vanpool parking provided by the project as proposed were relinquished. Construction of a



Alternative B

F.A.R. Maximum: 15.9:1
F.A.R. Actual: 15.9:1

Uses	Sq. Ft.
Office	159,000
Residential (135 units)	102,000
Parking (135 spaces)	54,000*
Mechanical	27,000*
Lobby/Retail	12,000*
TOTAL	354,000

Typical Floor: 124x109 = 13,360

Alternative C

F.A.R. Maximum: 15.9:1
F.A.R. Actual: 15.9:1

Uses	Sq. Ft.
Office	258,700
Residential (46 units)	30,000
Parking (46 spaces)	12,000*
Mechanical	27,000*
Lobby/Retail	10,000*
TOTAL	337,700

Typical Floor: 124x109 = 13,360

The Project

F.A.R. Maximum: 14:1
F.A.R. Actual: 14:1

Uses	Sq. Ft.
Office	262,000
Parking (22 spaces)	13,360*
Mechanical	13,000*
Lobby/Retail	6,000*
TOTAL	264,000**

Typical Floor: 124x109 = 13,360

*ALL OR PORTIONS NOT INCLUDED IN GROSS FLOOR AREA

**GROSS SQUARE FEET FOR F.A.R.

Figure 33: Alternatives Complying with Current Provisions (Interim) of the City Planning Code

two-story basement would encounter dewatering requirements not foreseen for the project as proposed. If parking were provided at a 1-to-1 ratio, 135 spaces would be provided for the housing units, requiring four levels of parking. Energy use by the residential space would be about one-third higher than for equivalent office space. Traffic noise would be more perceptible in the residential space than in the office space as the windows would be openable. A separate apartment lobby and separate elevators would reduce the area per floor available for office use.

This alternative has been rejected by the project sponsor since the objective of the project is to provide the maximum amount of office space which the site can accommodate. It is the sponsor's intent to provide required housing elsewhere in the City. The project site and environs are considered by the sponsor to be undesirable for housing because of the proximity of the freeway off-ramp and the lack of neighborhood services and amenities required for housing. The nearest food market is in the Golden Gateway, seven blocks from the site. The nearest prescription pharmacy is on Market Street four blocks from the site. No resident-serving commercial facilities are known to be proposed closer to the site.

C. SOME RESIDENTIAL UNITS ON SITE USING BONUS FLOOR AREA AND RETAINING MAXIMUM OFFICE SPACE INCLUDED IN THE PROJECT

Retaining the maximum office space provided by the project, some 30,000 square feet of residential space could be added by using only the allowable bonus credits. This would provide not more than 46 residential units of studio size on the site with a total Floor Area Ratio of 15.9:1.

This alternative would require a minimum of 12 parking spaces for the housing units and would add transportation, service, and energy impacts engenderd by 92 residents on the site (assuming an occupancy of two persons per unit) similar to those described in Alternative B. A separate apartment lobby and separate elevators would reduce the area per floor available for office use. If 46 parking spaces were provided, a two-story basement would have to be constructed with resultant dewatering problems.

This alternative has been rejected by the sponsor as it is intended to provide required housing elsewhere in the City and because the site is considered by

the project sponsor to be undesirable for housing because of the proximity of the freeway off-ramp and the lack of neighborhood services and amenities required for housing, as noted in Alternative B.

D. OFFICE SPACE WITH FULL RESIDENTIAL REQUIREMENT PROVIDED ON-SITE UNDER REGULATIONS PROPOSED IN GUIDING DOWNTOWN DEVELOPMENT

This alternative would comply with the regulations proposed by the Department of City Planning in Guiding Downtown Development published in May 1981. It would provide the least amount of office space of any of the alternatives since the building height would be limited to 240 feet as proposed on Map 2, page 6 of the Guiding Downtown Development document. The residential requirement and height limit would allow 146,000 square feet of offices and a balance of 93,600 square feet of residential space permitting a maximum of 131 units. Although the Guiding Downtown Development proposals would allow a 5:1 Floor Area Ratio for housing in addition to a basic 12:1 Floor Area Ratio for offices, the maximum F.A.R. attainable under this alternative would be 14.7:1 since the 240-foot height limit would act as a contraint on reaching the maximum Floor Area Ratio. The building plan for this alternative would have a rear yard area of ten feet compared with 28.5 feet for the project as proposed in order to provide the maximum floor area, and no side yard on the south side of the building compared with 12.5 feet as proposed. Upper level setbacks required for residential units would provide a sculptured profile. Recreation space at the ratio of one square foot per 25 square feet of office space would have to be provided off-site. The number of loading spaces provided on the site would be the same as in the project and would comply with the Guiding Downtown Development standards as there would less office space. The space on the south side of the building would be extended by 30 feet to meet the depth requirement of 55 feet for one of the stalls.

This alternative would reduce the amount of office space by 13,000 feet more than would Alternative B. The overall reductions in office impacts would be similar to those described under Alternative B as compared with the project as proposed. The number of housing units provided would be four fewer than provided in Alternative B. The residential impacts of this alternative would be similar to those provided in Alternative B.

This alternative has not been considered favorably by the project sponsor because it would provide the least amount of space for office use whereas the objective of the sponsor is to provide the maximum amount of office space legally permitted. The sponsor's attitude toward providing housing on the site, as described under Alternatives B and C, also applies to this alternative. Amenities provided by the project as proposed, such as the 28-foot rear-yard garden area, the south wall setback from the property line, and the three-story high entry court, would be sacrificed to obtain the maximum floor area possible under the 240-foot height limit constraint.

E. MAXIMUM OFFICE SPACE WITH RESIDENTIAL UNITS ON-SITE USING BONUS FLOOR AREA UNDER REGULATIONS IN GUIDING DOWNTOWN DEVELOPMENT

This alternative is based on a Floor Area Ratio of 12 to 1, a retail bonus of 0.5 to 1, and a transfer of development rights from an architecturally or historically significant building located elsewhere in the downtown area which would be credited with a 3 to 1 floor area bonus. The total Floor Area Ratio would be 15.5 to 1. The bonus of 5 to 1, up to a maximum of 17 to 1 allowed for housing by Guiding Downtown Development, could not be attained on the site because of the 240-foot height limit proposed by the Guiding Downtown Development document. Consequently, a project which would provide the maximum amount of office space permitted by the proposed guidelines could not also provide some housing unless the site were placed in a higher height district. The required recreation space of one square foot per 25 square feet of office space would have to be provided elsewhere under this alternative. The required space would be 11,720 square feet.

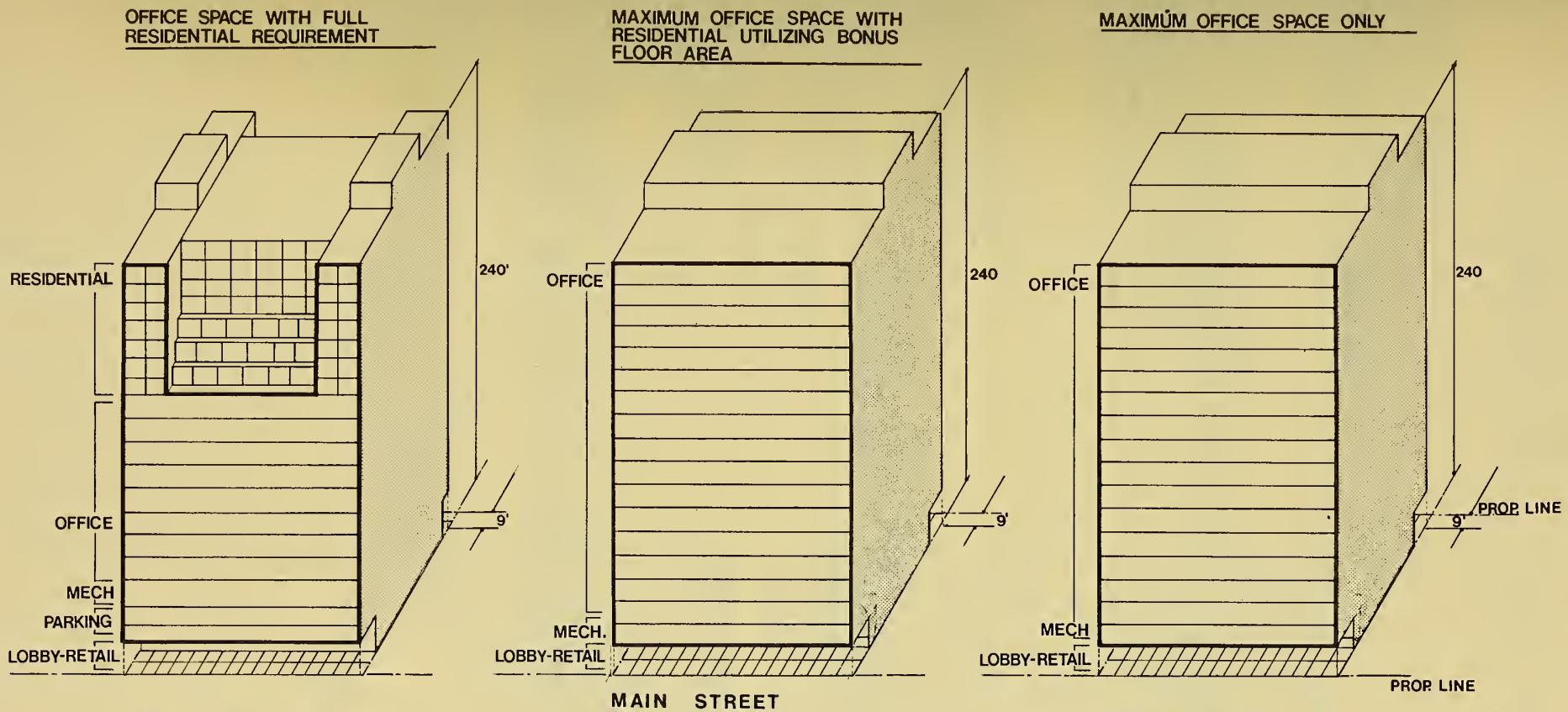
The impacts of this alternative would be similar to those of the project as proposed insofar as transportation, energy, air quality, noise, and geotechnics are concerned. Because of the lower height district, this alternative, like Alternative D, would be similar in height to the building east of the site and the building proposed on the parcel south of the site. No transition from lower to higher buildings would be provided.

The sponsor has rejected this alternative since it lacks the amenities provided by the proposed project, such as the entry courtyard, the rear garden, the south wall windows, and the upper-level setback and terrace.

F. MAXIMUM OFFICE SPACE WITHOUT HOUSING UNDER REGULATIONS PROPOSED IN GUIDING DOWNTOWN DEVELOPMENT

Although the basic floor area permitted on the site would be 12:1 if the recommendations of Guiding Downtown Development were adopted, an additional 0.5:1 F.A.R. could be obtained for the provision of retail space on the ground level. An additional 3:1 F.A.R. could be gained by the transfer of development rights from a building parcel elsewhere in the C-3-O District where an existing building of architectural or historical significance would be preserved. This alternative is based on the assumption that such a building would be allocated for this purpose. The resulting F.A.R. allowable on the site would be 15.5:1. Constrained by the 240-foot height limit recommended by Guiding Downtown Development, the building would extend the full width of the site and provide a 10-foot space at the rear. It would contain 293,000 square feet of office space on 17 floors and 12,000 square feet of retail and lobby space on the street level. This building would be like Alternative E and have the same impacts as Alternative E, including the lack of a ground level courtyard and garden. Like Alternative E, it has been rejected by the project sponsor.

A comparison of the alternatives complying with Guiding Downtown Development is shown in Figure 34.



Alternative D

F.A.R. Maximum: 17:1
F.A.R. Actual: 14.7:1

Uses

Office	146,000
Residential (131 units)	93,600
Parking (131 spaces)	52,400 *
Mechanical	17,400 *
Lobby/Retail	11,400 *
TOTAL	321,200

Typical Floor: 136x127 = 17,200

Alternative E

F.A.R. Maximum: 17:1
F.A.R. Actual: 15.5:1

Uses

Office	293,000
Residential	0
Mechanical	17,200 *
Lobby/Retail	12,000 *

Typical Floor: 136x127 = 17,200

Alternative F

F.A.R. Maximum: 15.5:1
F.A.R. Actual: 15.5:1

Uses

Office	293,000
Residential	0
Mechanical	17,200 *
Lobby/Retail	12,000 *

Typical Floor: 136x127 = 17,200

*ALL OR PORTIONS NOT INCLUDED IN GROSS FLOOR AREA

Figure 34: Alternatives Complying with Guiding Downtown Development Controls

VIII. EIR AUTHORS AND CONSULTANTS; ORGANIZATIONS AND PERSONS CONSULTED

EIR AUTHORS

San Francisco Department of
City Planning
45 Hyde Street
San Francisco, CA 94102
Environmental Review Officer: Alec Bash
Assistant Environmental Review Officer: Barbara Sahm
Project Coordinator: Paul Rosetter

EIR CONSULTANTS

Environmental Science Associate, Inc.
1390 Market Street, Suite 215
San Francisco, CA 94102

(Prime Consultant: Project Description, Land Use, Urban Design, Employment, Housing, and Fiscal Factors, Circulation and Parking, Air Quality, Noise, Energy, Geology, Seismology and Hydrology, Significant Environmental Effects, Mitigation Measures, and Alternatives to the Proposed Project.)

Nancy C. Clark:	Associate-in-Charge
James R. McCarthy, AICP	Project Manager

Donald Ballanti
Certified Consulting Meteorogist
1424 Scott Street
El Cerrito, CA 94530

VIII. EIR Authors

PROJECT SPONSOR

Daon Corporation
444 Market Street, Suite 2500
San Francisco, CA 94111

PROJECT ARCHITECT AND ENGINEERS

Robinson Mills & Williams
Architecture and Planning
153 Kearny Street
San Francisco, CA 94108

Johnston Rutigliano
Consulting Engineers
251 Kearny Street
San Francisco, CA 94108

Flack + Kurtz Consulting Engineers
251 Post Street
San Francisco, CA 94108

Harding Lawson Associates
Soils Engineers
20 Hawthorne Street
San Francisco, CA 94105

Swinerton & Walberg Company
Contractors
100 Pine Street
San Francisco, CA 94111

Charles T. Gill
Planning Consultant
315 Ivy Street
San Francisco, CA 94102

CITY AND COUNTY OF SAN FRANCISCO

Department of City Planning
100 Larkin Street
San Francisco, CA 94102
- Dean Macris
- Lu Blazej
- Richard Hedman
- Lois Scott
- Gail Bloom

Municipal Railway
949 Presidio Avenue
San Francisco, CA 94115
- Susan Chelone

Department of Public Works
Traffic Engineering Division
460 McAllister Street
San Francisco, CA 94102
- Nelson Wong

Public Utilities Commission
Bureau of Energy Conservation
949 Presidio Avenue
San Francisco, CA 94115
- Flint Nelson, Director

Tax Collectors Office
City Hall
San Francisco, CA 94102
- John Dilg

IX. DISTRIBUTION LIST

REGIONAL AGENCIES

Association of Bay Area
Governments
Hotel Claremont
Berkeley, California 94705

Bay Area Air Quality
Management District
939 Ellis Street
San Francisco, California 94109

Bay Area Rapid Transit
District
800 Madison Street
Oakland, California 94607

Golden Gate Bridge Highway
& Transportation District
P.O. Box 9000, Presidio Sta.
San Francisco, California 94129

Metropolitan Transportation
Commission
Hotel Claremont
Berkeley, California 94705

San Mateo County Transit
District
400 South El Camino
San Mateo, California 94402

Alameda-Contra Costa Transit
District
508 - 16th Street
Oakland, CA 94612

Caltrans
P.O. Box 3366
Rincon Annex
San Francisco, CA 94119

STATE AGENCY

State Office of Intergovernmental
Management
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

CITY AND COUNTY OF SAN FRANCISCO

City Planning Commission
Ms. Susan Bierman
Mr. Jerome Klein
Mr. Yoshio Nakashima
Mr. Toby Rosenblatt
Mr. Eugene Kelleher, Alternate
for Mr. Richard Sklar
Mr. Norman Karasick, Alternate
for Mr. Roger Boas

Landmarks Preservation Advisory
Board
100 Larkin Street
San Francisco, CA 94102
Attention: Jonathan Malone

Water Department
Distribution Division
425 Mason Street
San Francisco, California 94102
Attention: John Kenck, Manager

San Francisco Fire Department
260 Golden Gate Avenue
San Francsco, California 94102
Attention: Joseph Sullivan, Chief
Support Services

San Francisco Police Department
850 Bryant Street
San Francisco, California 94103
Attention: Sgt. Paul Libert, Planning and Research Division

San Francisco Department of Public Works
Traffic Engineering Division
460 McAllister Street
San Francisco, California 94102
Attention: Scott Shoaf

Bureau of Building Inspection
450 McAllister Street
San Francisco, CA 94102
Attention: Robery Levy, Superintendent

San Francisco Committee for Utility Liaison (CULOP)
363 City Hall
San Francisco, CA 94102
Attention: Herman Beneke

MUNI Planning Division
949 Presidio Avenue, #204
San Francisco, CA 94115
Attention: Susan Chelone

Economic Development Council
552 McAllister Street
San Francisco, CA 94102
Attention: Richard Goblirsch

GROUPS & INDIVIDUALS

American Institute of Architects
Northern California Chapter
790 Market Street
San Francisco, California 94102

Building Owners and Managers Association
690 Market Street
San Francisco, California 94104
Attention: Elmer Johnson

Building Service Employees Union Local 87
240 Golden Gate Avenue
San Francisco, California 94102

Charles Hall Page and Associates
364 Bush Street
San Francisco, California 94104

Downtown Senior Social Services
295 Eddy Street
San Francisco, California 94102

Downtown Association
582 Market Street
San Francisco, California 94104
Attention: Lloyd Pflueger, Mgr.

The Foundation for San Francisco's Architectural Heritage
2007 Franklin Street
San Francisco, California 94109
Attention: H. Grant Dehart
Executive Director

Gray Panthers
944 Market Street
San Francisco, California 94102
Attention: W. Nunnally

Junior Chamber of Commerce
251 Kearny Street
San Francisco, California 94108

Friends of the Earth
124 Spear Street
San Francisco, California 94105
Attention: Connie Parrish

League of Women Voters
12 Geary Street, Room 605
San Francisco, California 94108

Legal Assistance to the Elderly
944 Market Street, #803
San Francisco, California 94102

San Francisco Beautiful
41 Sutter Street
San Francisco, California 94104
Attention: Mrs. H. Klussman, President

San Francisco Building and Construction Trades Council
400 Alabama Street, Room 100
San Francisco, California 94110
Attention: Stanley Smith

San Francisco Forward
690 Market Street
San Francisco, CA 94104
Attention: Frank Noto

San Francisco Chamber of Commerce
465 California Street
San Francisco, California 94104
Attention: Richard Morton

San Francisco Ecology Center
13 Columbus Avenue
San Francisco, California 94111

San Francisco Labor Council
3068 - 16th Street
San Francisco, California 94103
Attention: Bernard Speckman

San Francisco Planning and Urban Research Association
312 Sutter Street
San Francisco, California 94108

San Francisco Convention and Visitors Bureau
1390 Market Street, Suite 260
San Francisco, California 94102
Attention: George D. Kirkland, Executive Director

San Francisco Tomorrow
728 Montgomery Street, Room 34
San Francisco, California 94111
Attention: Suzanne Smith

San Franciscans for Reasonable Growth
9 First Street
San Francisco, California 94105
Attention: Carl Imparato

Senior Escort Program
South of Market Branch
814 Mission Street
San Francisco, California 94103
Attention: Leslie Halford
Neighborhood Coordinator

Sierra Club
530 Bush Street
San Francisco, California 94105
Attention: Becky Evans

Tenant & Owners Development Corporation
177 Jessie Street
San Francisco, California 94105
Attention: John Elberling

Women's Chamber of Commerce
681 Market Street, Room 992
San Francisco, California 94105

Robinson Mills and Williams
153 Kearny Street
San Francisco, California 94105
Attention: Matthew Mills

Morrison and Foerster
One Market Plaza
Spear Street Tower
San Francisco, California 94105
Attention: Zane O. Gresham

Daon Corporation
444 Market Street
San Francisco, California 94111
Attention: Ian Stuart

Environmental Impact Planning Corporation
319 - 11th Street
San Francisco, California 94103
Attention: Ted Adams

Charles T. Gill
315 Ivy Street
San Francisco, California 94102

Sue Hestor
4536 - 20th Street
San Francisco, California 94114

PROPERTY OWNERS

Transamerica Title Insurance Co.
c/o Fred Franklin
244 Pine Street
San Francisco, California 94104

Lakeside Company
c/o E. Ebert
155 Sansome Street
San Francisco, California 94104

R. L. Rustici
P.O. Box 598
Lower Lake, California 95457

Donald R and James R. Viegas
45 Stevenson Street
San Francisco, California 94105

Richard D. Freeman
155 Montgomery Street, #606
San Francisco, California 94104

Frankland L. Cutshall, President
Johnson Printing Plates Company
135 Main Street
San Francisco, CA 94105

LIBRARIES

Environmental Protection Agency
Library
215 Fremont Street
San Francisco, CA 94105
Attention: Jean Circiello

Golden Gate University Library
550 Mission Street
San Francisco, CA 94105

Hastings College of the Law Library
198 McAllister Street
San Francisco, CA 94102

San Francisco City College, Downtown
Center
Fourth and Mission Streets
San Francisco, CA 94103

Institute of Governmental Studies
1209 Moses Hall
University of California
Berkeley, CA 94720

San Francisco Public Library (2 copies)
Main Library, Civic Center
Documents Department
200 Larkin Street
San Francisco, CA 94102
Attention: Faith Van Liere

San Francisco State Library
Government Publications
San Francisco State University
1600 Holloway Avenue
San Francisco, CA 94132

Stanford University Library
Government Documents Section
Stanford, CA 94305

University of San Francisco
Gleeson Library
Golden Gate and Parker Avenues
San Francisco, CA 94115

MEDIA

San Francisco Bay Guardian
2700 19th Street
San Francisco, CA 94110

San Francisco Chronicle
925 Mission Street
San Francisco, CA 94103
Attention: Marshall Kilduff

San Francisco Examiner
110 Fifth Street
San Francisco, CA 94105
Attention: Gerald Adams

San Francisco Progress
851 Howard Street
San Francisco, CA 94103
Attention: Mike Mewhinney

APPENDIX A. TRANSPORTATION

Appendix A-1: Travel Demand by Mode

The basic approach taken in the analysis of travel mode was to assign each person trip to a viable mode of transportation, including trips not related to the studied developments but affected by them through competition for parking, freeway access, etc. For example, it would not be acceptable under this approach to simply find that there would be a demand for long-term parking not met by the supply; that would leave trips "dangling" on a non-viable mode. Even though most would-be parkers from the studied developments could be expected to win parking spaces through competition, that would leave others displaced from parking without a viable transportation mode.

Such trips (as displaced from parking) were therefore assigned principally to transit. The exact assumptions for this assignment (in Table 9, page 81) were derived directly from the information in travel to and from the central business district contained in Tables 2-2, 2-3, 2-6, 2-7, and 2-9 of the current Muni 5-Year Plan (1981-86). In that plan, a shift of travel toward Muni (+2.3%) and other carriers from automobiles (-5.0% change in mode split) is assumed during a period of 11,000,000 square feet of growth of office space downtown. That these somewhat modest changes in the mode splits can result in the large differences seen in a comparison of Tables 8 and 9, pages 80 and 81, is due to the fact that the new mode splits must be applied (by definition of a mode split) to the total number of central business district trips, generated by existing office space of roughly 70,000,000 square feet, as well as to the new square footage.

Although the percentage of trips made by automobile would decrease, the total number of trips (on all modes) would increase, and a net increase of travel by automobile of about 1% per year is thus allowed for in the Muni plan.

There is another method similar to the above, whereby Table 9, page 81, may be obtained from Table 8, page 80, alone. It may simply be assumed that trips from new developments are made by automobile as shown in Table 8, page 80, but that others in the City are displaced from automobiles to transit on a one-to-one basis. There would therefore be no net effect of a new development on automobile use. The total effect on transit use would be given partly by Table 8, page 80, but with the addition of old trips reassigned to transit after displacement by new automobile trips. This latter method was adopted in a first draft of this report. It is notable that the transit trips in the first version of Table 9, page 81, thus obtained differed from those in the present version by only a few percentage points.

Appendix A-2: Method Used in Analysis of Pedestrian Traffic

Future pedestrian flows along sidewalks and crosswalks were projected using trip generation rates and modal splits used by the Office of Environmental Review. A destination was established for each travel mode, and pedestrians were assigned to routes from each building to these destinations. Volumes were balanced equally between both sides of a street and parallel crosswalks.

For the impacts section of this report, the existing crosswalk volumes at the Mission-Main intersection were reassigned to the proposed new crosswalk design shown in Figure 28, page 85. Implicit in the analysis of the south crosswalk at this intersection was the assumption that the raised dividers separating off-ramp through-traffic from Main Street traffic and left-turning traffic would serve as "safety islands" for pedestrians who could not cross the entire street on one signal indication. (Most pedestrians would be in this category during peak hours.)

The demand on sidewalk capacity was given as the ratio of the actual flow rate to the maximum flow rate, 18 pedestrians per foot of effective sidewalk width per minute (pfm), reported by Pushkarev and Zupan./1/ Crosswalk capacity was estimated from this maximum flow rate, with the added assumption that the interval available for pedestrians to step off the curb is limited to the signal green time minus the crosswalk crossing time. The latter interval was estimated from a walking speed of 4 feet per second. Reservoir capacity was calculated at 5 square feet per person.

NOTE - Appendix A-2

/1/ Pushkarev, Boris and Jeffrey M. Zupan, 1975, Urban Space for Pedestrians, Cambridge, MA, MIT Press.

TABLE A-3: PEDESTRIAN LEVELS OF SERVICE

Flow Regime	Walking Speed Choice	Conflicts	Flow Rate Average
Open	Free Selection	None	0.5
Unimpeded	Some Selection	Minor	0.5-2
Impeded	Some Selection	High Indirect Interaction	2-6
Constrained	Some Restriction	Multiple	6-10
Crowded	Restricted	High Probability	10-14
Congested	All Reduced	Frequent	14-188
Jammed*	Shuffle Only	Unavoidable	(greater than 18)

*For jammed conditions, the flow rate shown is a projected flow rate; the actual flow rate would be less as sidewalk capacity is limited to about 18 pedestrians per foot of sidewalk width per minute (18 P/F/M).

SOURCE: Pushkarev, Boris and Jeffry M. Zupan, Urban Space for Pedestrians, Cambridge, MA, MIT Press, 1975.

Appendix A-4: Method Used in Intersection Vehicular Capacity Analysis

Operating conditions at intersections were assessed by estimating the percentage of green time which would be required to allow conflicting (critical) vehicular and pedestrian movements to be made. For signalized intersections, the existing split of green time between phases was assumed in a separate study of each phase. For left turns through a crosswalk, pedestrians were treated as the sole impediment to the turn if the percentage of green time required by them to cross was greater than that required for vehicular through traffic opposing the left turns. This approach was judged particularly appropriate for analytical study of the Mission-Main intersection. Pedestrian-vehicular conflicts there have a limiting effect on vehicular operating conditions during peak hours. An analysis based on an implicit assumption that the allocation of green time between signal phases could be arbitrarily adjusted to optimize traffic conditions would not have been appropriate. The signalized intersections are part of the interconnected south-of-Market signal system, so that adjustments cannot be made at one intersection without potentially adverse effects at others. Also, pedestrians in crosswalks require a green signal indication long enough to allow for a safe crossing. Specific assumptions were:

- At signalized intersections lane capacity is 1,800 vehicles per hour for through movements and 1,200 for turning movements. At 4-way stop-sign-controlled intersections, all lane capacities were assumed to be 1,200 vehicles per hour. Buses were assumed to have twice the effect on capacity as automobiles. (Buses are about 10% of the total peak-hour traffic on Mission Street.)

- Lane assignments of through movements on multiple-lane approaches were chosen to balance the total percentage of green time required for all the improvements from each lane, or to assume exclusive use of a lane for turning movements which required more green time than adjacent through movements.

- Pedestrians were assumed to proceed at a maximum rate of 18 persons per foot of crosswalk width per minute. The green time required for their crossing included a clearance interval, analogous to a flashing "don't walk" pedestrian signal indication, of 3 seconds per lane (4 feet per second) of the crossed roadway.

- Vehicular service levels were determined from the percentage of green time required: greater than 100%, F; 90-100%, E; 80-90%, D; 70-80%, C; 60-70%, B; less than 60%, A. These are described in Table A-5., page 144

For estimation of future traffic conditions, the base traffic (existing) was increased by a downtown growth factor of 1.0% to give the 1983 or 1984 level, and the new traffic generated by the project or other development added./1/

Also added were the proportion of time required to accommodate additional pedestrian flows, which affected turning movements as described above.

Notes - Appendix A-4

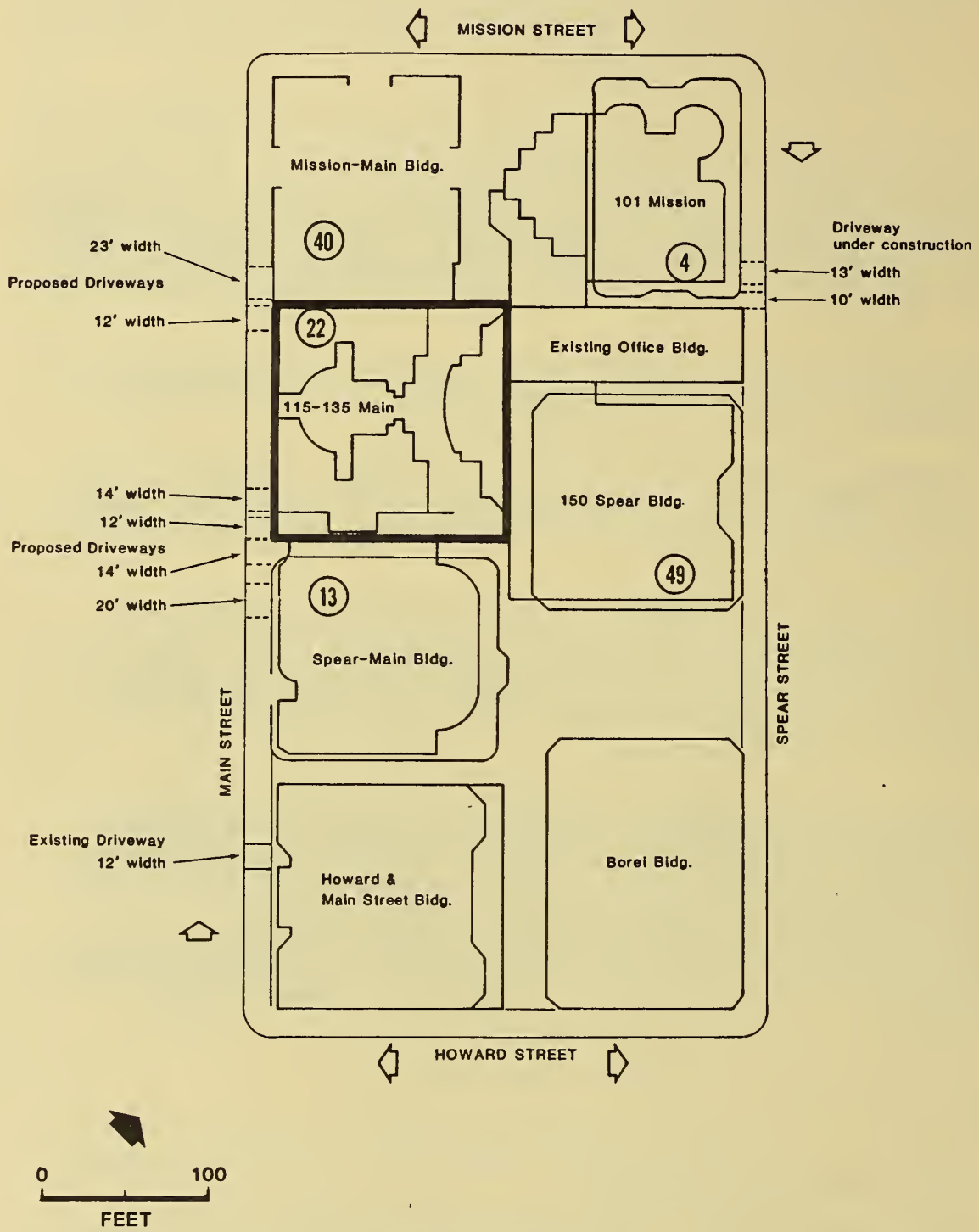
/1/ This is the rate recommended by the Division of Traffic Engineering, Department of Public Works, in the Yerba Buena Center Supplement, ADEIR, San Francisco City Planning Commission and San Francisco Redevelopment Agency, February 1981. It also has been shown, by the consultant (ESA), to be consistent with the Muni 5-Year Plan (1981-86), which allows for a 1% annual growth of travel by automobile from the central business district.

TABLE A-5: VEHICULAR LEVELS OF SERVICE

Level of Service	Description
A	At level of service A, there are no loaded cycles (i.e., the load factor* is 0.0) and few are even close to loaded. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.
B	Level of Service B represents stable operation, with a load factor of not over 0.1; an occasional approach phase is fully utilized and a substantial number are approaching full use.
C	In level of service C stable operation continues. Loading is still intermittent, but more frequent with the load factor ranging from 0.1 to 0.3. Occasionally drivers may have to wait through more than one red signal indication.
D	Level of Service D encompasses a zone of increasing restriction approaching instability in the limit when the load factor reaches 0.70. Delays to approaching vehicles may be substantial during short peaks within the peak period, but enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive back-ups.
E	Capacity occurs at level of service E. It represents the most vehicles that any particular intersection approach can acommodate. Although theoretically a load factor of 1.0 would represent capacity, in practice full utilization of every cycle is seldom attained, no matter how great the demand, unless the street is highly friction-free. A load factor range of 0.7 to 1.0 is more realistic. At capacity there may be long queues of vehicles waiting up-stream of the intersection and delays may be great (up to several signal cycles).
F	Level of Service F represents jammed conditions.

*The load factor is the fraction of signal cycles which are concluded without clearance of the intersection approach.

SOURCE: Highway Research Board, 1965, Highway Capacity Manual, Special Report 87, as edited by the San Francisco Department of City Planning, Office of Environmental Review.



LEGEND

Project Location

FIGURE A-6: Location of Curb Cuts in Project Block Upon Completion of All Proposed Projects

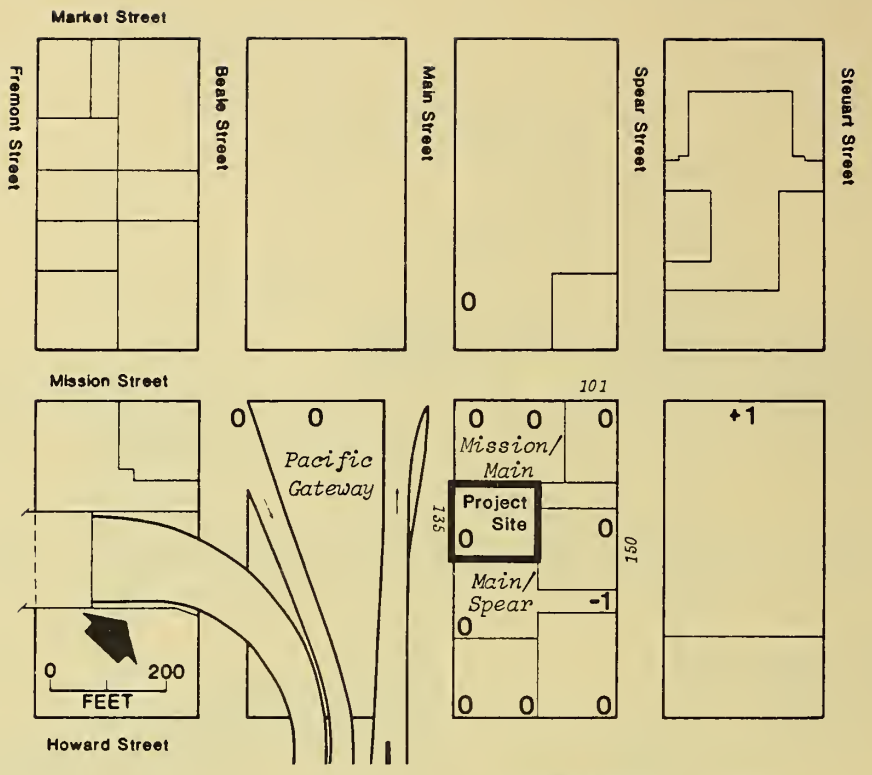
APPENDIX B. GEOLOGY, SEISMICITY, AND HYDROLOGY

TABLE B-1: TYPES AND DEPTHS OF SEDIMENTS UNDERLYING THE PROJECT SITE

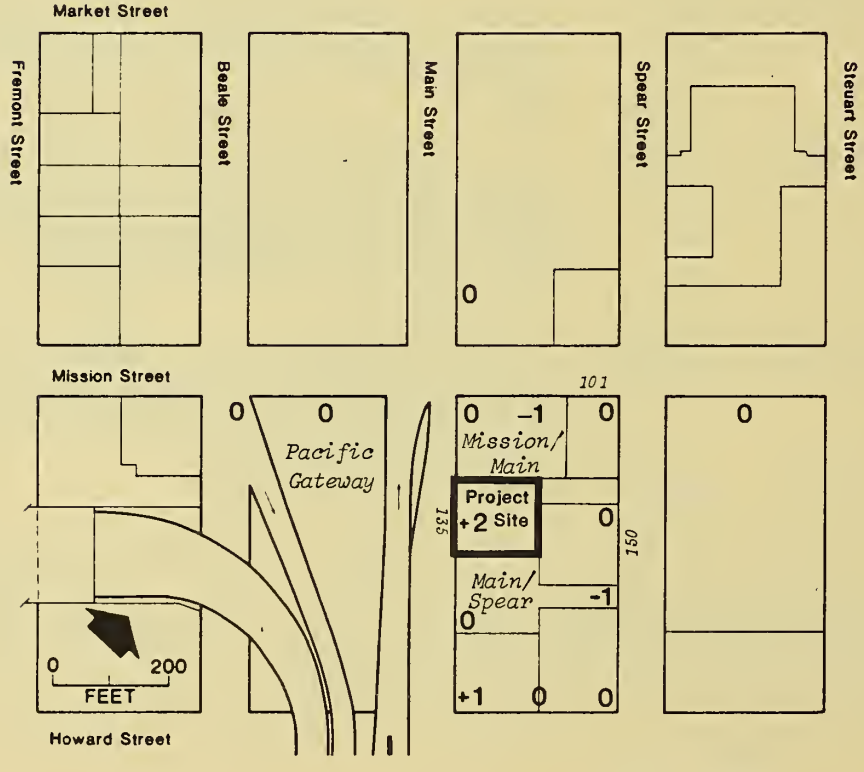
Approximate Elevation Below S.F. Datum	Geologic Material
0 - 18 feet (± 1 foot)*	Fill: loose to medium dense sand and silty sand, with wood, rubble and building debris scattered throughout.
18 - 61 feet (± 1 foot)	Bay mud: low strength, highly compressible silty clay, containing shells, organic matter, and irregular lenses of clean, fine sand.
61 - 101 feet (± 3 feet)	Dense to very dense sands or sandy, interbedded with layers of silts and clays. Sands of moderate to high strength: silts and clays are of moderate strength. (Posey Formation)
101 - 166 feet (± 12 feet)	Old Bay silts and clays: stiff sandy clays with occasional sand lenses, shells, and organic matter. (San Antonio Formation)
below 166 feet	Bedrock. (Franciscan Formation)

*Variations in depth at the bottom of each layer are shown in parentheses.

SOURCE: Harding-Lawson Associates, August 5, 1981, Soil Investigation, 115-135 Main Street Office Building, San Francisco



NORTHWEST WINDS



WEST WINDS

LEGEND

0- No change

+1- Increase of 1 Class

-1- Decrease of 1 Class, etc.

SOURCE: Professor Bruce White, U.C. Davis

FIGURE C-1: Change in Class of Ground Level Wind Speeds Due to Project and Cumulative Development

APPENDIX D: FINAL INITIAL STUDY

(Differences between aspects of the project description, floor area calculations and other figures presented in the Initial Study and those found in this Environmental Impact Report reflect changes and refinements made in the project between the publication dates of the Final Initial Study and the Draft Environmental Impact Report.)

August 7, 1981

SAN FRANCISCO DEPARTMENT OF CITY PLANNING 100 LARKIN STREET · SAN FRANCISCO, CALIFORNIA 94102
(415) 552-1134

NOTICE THAT AN ENVIRONMENTAL IMPACT REPORT IS DETERMINED TO BE REQUIRED

Date of this Notice: August 7, 1981

Lead Agency: City and County of San Francisco, Department of City Planning
100 Larkin Street, San Francisco, CA. 94102

Agency Contact Person: Paul Rosetter Tel: (415) 552-1134

Project Title: EE81.61: 115-135 Main, Office Building

Project Sponsor: Daon Corporation

Project Contact Person: Ian Stuart

Project Address: 135 Main Street

Assessor's Block(s) and Lot(s): 3717/12 & 13

City and County: San Francisco

Project Description: Construct on 18,906.25 square foot lot a 24-story, 360-foot high office building with 264,500 square feet of floor area, ground floor retail space, and subsurface parking for 22 cars after demolition of two brick commercial structures; requiring discretionary review.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: August 17, 1981.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a $25.00 filing fee.

Alec S. Bash

Alec S. Bash, Environmental Review Officer

ER5 6/80

FINAL INITIAL STUDY
135 MAIN STREET OFFICE BUILDING
EE 81.61

PROJECT DESCRIPTION

The proposed project is a 24-story office building on Lots 12 and 13 in Assessor's Block 3717 located on the east side of Main Street between Mission and Howard Streets. The site is in the C-3-O (Downtown Office) Use District and the 400-I Height and Bulk District. The site is 137.5 feet by 137.5 feet containing 18,906.25 square feet.

The proposed building would be 24 stories or 360 feet high and would contain about 264,500 gross square feet of floor area. The building would be set back 12.5 feet from the southern property line in order to provide an airspace between it and the 19-story Spear-Main Building proposed by Vintage Properties on the adjoining parcel which would also be set back from the property line. This plan is a modification made at the request of the Department of City Planning since publication of the Draft Initial Study in April 1981 in order to contribute 12.5 feet to the air space between the two buildings and to increase the height of this building. The building would measure 125 feet along Main Street and would be 109 feet deep.

The base of the building would consist of a partly open three-story entrance courtyard, encircled by tiers of masonry planters and separated from Main Street by a partial wall. Creeping fig would partially cover the sides of the planters and the walls on the three enclosed sides of the courtyard up to the top of the third story. On the left side of the masonry base facade a ramp with a 13 percent slope would be provided under the planting tiers leading to 22 parking spaces in the basement, including one stall for handicapped drivers. Six spaces for bicycles would also be provided.

On the right side there would be an entrance to an enclosed loading dock for use by vans. On the south side of the building an unenclosed loading space for larger trucks would connect with the enclosed loading dock.

The pedestrian entrance would open to the lobby which would have four pairs of elevators, retail space, and a glass-covered garden at the rear of the site

visually open to the sky for a depth of 28.5 feet. This area would be incorporated into a midblock pedestrian way traversing the properties to the south and north of the site, which are now proposed for new development, and would provide a connecting link. Provision of a north-south pedestrian way was proposed and requested by the Department of City Planning.

The second floor, overlooking the entry garden and the rear garden, would be used for offices. The third floor, overlooking the entry courtyard, would also be used for offices. The fourth and fifth floors would be the mechanical floors. The main body of the building would be 19 levels of office space with a curtain wall of energy-efficient transparent green glass in front and in back with floor-to-ceiling windows. Spandrels between floors on the Main Street frontage would have a copper strip embedded in precast concrete panels. The copper would develop a distinctive blue-green patina through weathering. The rounded mechanical penthouse roof also would be covered with copper.

The building would have side windows on the south side facing the proposed Spear-Main Building. The tier of side windows nearest Main Street and nearest the rear facade would have tinted glass to provide a design accent. The top three office floors would each have corner terraces on the east side of the building which would be set back one above the other. This would form a distinctive silhouette for the building when seen from the Bay Bridge, the Bay, or nearby buildings. The north wall of the building would be one foot from the property line adjoining the proposed 27-story, 386-feet high, Mission-Main Building. It would contain no windows except next to the Main Street corner where a five-foot setback would be matched by the Main-Mission Building as proposed.

The project sponsor is Daon Corporation, San Francisco. Project architects are Robinson Mills and Williams, San Francisco.

POTENTIAL ENVIRONMENTAL EFFECTS

Potential environmental issues which will be given further analysis in an Environmental Impact Report include circulation requirements and effects on existing vehicular and transit systems, traffic generated air quality effects,

energy consumption, construction noise, increased demand for housing attributable to the project, wind and shadowing effects, and compatibility with Master Plan and other City policies including urban design.

Potential environmental issues of the proposed project that were determined to be insignificant, and therefore will not be addressed in subsequent environmental documentation for the project, are described below.

Relocation: The printing firm on the site has made arrangements for relocating to a Peninsula location. (A letter from the owner of the printing business is on file at the Office of Environmental Review.) The project sponsor will provide assistance by a real estate broker, if required, in the relocation of the picture framing business on the site.

Noise: After completion the project would not increase audible noise levels in the project vicinity.

Public Services and Utilities: The increased demand for public services and utilities attributable to the project would not require additional personnel or equipment, except for the possibility of a cumulative requirement for an increase in size of the six-inch diameter water main serving the site. See pages 19 and 20 for mitigation measures to reduce the need for increased public services and utilities at the project site.

Biology: The project would have no effect on plants or animals as the site is covered almost totally by buildings.

Construction Air Quality: Construction activities would not increase the frequency of violations of air quality standards. See page 18 for a means of reducing temporary particulate emissions during construction.

Alternatives to be considered in the Environmental Impact Report include the following:

1 - No project
2 - No project in San Francisco

3 - Compliance with "Guiding Downtown Development, May 1981," with

a. All required housing on-site

b. Some housing on-site

c. No housing on-site

4 - Compliance with Interim Controls

a. All required housing on-site, using bonuses

b. Some housing on-site

5 - Original Design Described in Draft Initial Study

ENVIRONMENTAL EVALUATION CHECKLIST

A. GENERAL CONSIDERATIONS:

	Yes	Maybe	No	N/A	Disc.
1. Would the project conflict with objectives and policies in the Comprehensive Plan (Master Plan) of the City?	___	X	___	___	X
2. Would the project require a variance, or other special authorization under the City Planning Code?	___	___	X	___	X
3. Would the project require approval of permits from City Departments other than DCP or BBI, or from Regional, State or Federal Agencies.	___	___	X	___	___
4. Would the project conflict with adopted environmental plans and goals?	___	___	X	___	X

The proposed project would comply with certain adopted objectives and policies of the Comprehensive Plan. It would provide office space and employment in the Downtown core of San Francisco on a site that is close to local and regional transit lines. It would comply with pertinent provisions of the City Planning Code including the 14:1 Floor Area Ratio and 400-foot height limit. It would require discretionary review by the City Planning Commission under the provisions of the Commission's Resolution No. 8474, January 17, 1980. The 24-story project would comply with the Urban Design Element of the

Comprehensive Plan by providing a height transition from the 43-story Spear Street Tower of One Market Plaza, the 34-story PG&E Building and the 33-story Pacific Gateway Building north and northwest of the site to the 18-story and lower buildings located to the south and southeast of the site. It also would provide space at the rear of the site for a potential through-block pedestrian way which would facilitate the convenient movement of people by shortening pedestrian walking distance and providing an attractive garden environment separated from vehicular traffic. All aspects of the project relationship to the Master Plan will be discussed in the Environmental Impact Report.

B. ENVIRONMENTAL IMPACTS:

	Yes	Maybe	No	N/A	Disc.
1. Land Use. Would the proposed project:					
a. Be different from surrounding land uses?		X			X
b. Disrupt or divide the physical arrangement of an established community?			X		X

The project would be similar to most existing or proposed surrounding land uses in the area between Market, Steuart, and Beale Streets, and the elevated freeway south of Howard Street. Two office buildings are located in the southern end of the block at Howard and Main Streets and Howard and Spear Streets, one is under construction at 150 Spear Street adjacent to the rear of the site, and two are undergoing environmental review: the 101 Mission Street Building (EE 79.236) at the corner of Spear Street, and the Spear-Main Building (EE 80.349) on the parcel immediately adjacent to the southern boundary of the project site. Property on the north side of the site at Main and Mission Streets is also intended for new office development by its owners who have initiated the environmental review process (81.183E). Opposite the site is the Main Street freeway off-ramp and the Pacific Gateway Building which is under construction. North of the project block is the Federal Reserve Bank, under construction, and immediately south of the project block are three office buildings of which two are on Main Street.

East of the project block is the Rincon Annex Post Office, and loading area. The Rincon Point-South Beach Redevelopment Plan recommends a mixed office and housing use of this block when the postal service activities are moved to the India Basin Industrial Park. The block east of Steuart Street between The Embarcadero, Mission, and Howard Streets -- the East Street Row -- contains smaller and lower buildings ranging in height from three to nine stories. Among these is the Audiffred Building, a designated City landmark which is being restored after a fire, and The Embarcadero YMCA. The Northeastern Waterfront Plan, adopted as a part of the Master Plan by the City Planning Commission by Resolution 8481, 8596, and 8781, recommends retention of existing buildings in the block and infilling with buildings of a similar scale for office and housing use above ground level retail uses. The block is limited to a height of 84 feet.

	Yes	Maybe	No	N/A	Disc.
2. Visual Quality and Urban Design. Would the proposed project:					
a. Obstruct or degrade any scenic view or vista open to the public?			X		X
b. Reduce or obstruct views from adjacent or nearby buildings?	X				X
c. Create a negative aesthetic effect?			X		X
d. Generate light or glare affecting other properties?			X		X

The building would not affect views from the freeway off-ramp as existing buildings obstruct distant views. It would have a cumulative effect on views from nearby buildings. The building would relate to the skyline created by the group of new buildings recently completed or proposed on its block frontage. The building would contain no reflective glass or high intensity lighting and hence would not create glare to be seen from other properties or the freeway off-ramp. The effect of this building on the City skyline will be graphically presented in the EIR.

	Yes	Maybe	No	N/A	Disc.
3. Population/Employment/Housing. Would the proposed project:					
a. Alter the density of the area population?	X				X
b. Have a growth-inducing effect?		X			X
c. Require relocation of housing or businesses, with a displacement of people, in order to clear the site?	X				X
d. Create or eliminate jobs during construction and operation and maintenance of the project?	X				X
e. Create an additional demand for housing in San Francisco?	X				X

The project would increase the number of daily employees on the site from approximately 75 to approximately 1060. A possible growth inducing effect of the project might result from its continuing a trend to locate office buildings in the area south of Market Street. As the printing firm which occupies 135 Main Street was planning to move to a Peninsula location for reasons of business convenience independent of the decision to initiate the project, (see letter dated April 24, 1981 on file at the Office of Environmental Review), its 70 employees would not be considered as displaced by the project. Three to five employees would be displaced from 115 Main Street; the project sponsor will provide relocation assistance, if required, through its real estate broker. The project would create a net increase of approximately 985 jobs on the site. During construction a total of about 190 person-years of employment would be created, with an average of 120 workers employed at any one time. The project is expected to generate a demand for additional housing units in San Francisco. This will be evaluated in subsequent environmental documentation.

	Yes	Maybe	No	N/A	Disc.
4. Transportation/Circulation. Would the construction or operation of the project result in:					
a. Change in use of existing transportation systems? (transit, roadways, pedestrian ways, etc.)	X				X
b. An increase in traffic which is substantial in relation to existing loads and street capacity?		X			X

	Yes	Maybe	No	N/A	Disc.
c. Effects on existing parking facilities, or demand for new parking?	X				X
d. Alteration to current patterns of circulation or movement of people and/or goods?		X			X
e. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?		X			X
f. A need for maintenance or improvement or change in configuration of existing public roads or facilities?			X		
g. Construction of new public roads?			X		

The project would result in an increased use of existing transportation systems, both nearby freeways and local streets, and the local Muni and regional transit systems which serve Downtown San Francisco. The project would generate a parking demand. A detailed analysis will be made for the Environmental Impact Report that would include an estimate of the number of passenger and freight vehicle trips generated by the project, the impacts of such traffic on nearby streets and intersections, an estimate of parking and loading needs, the effects of the project on pedestrian movements in the project vicinity, and the project impacts and cumulative impacts on the local Muni transit routes and on regional systems relative to their capacities.

The project would require no change in the present physical pattern of vehicular circulation nor in the configuration of existing public streets. It is suggested by the project sponsor, in the light of new development in the area, that existing diagonal parking on Main Street be transferred from the east side to the west side adjacent to the freeway off-ramp, and that the east side of the street be used for parallel parking or, if necessary, no parking. An analysis of possible changes in the modal split between public transit and private vehicles will be made in the Environmental Impact Report.

	Yes	Maybe	No	N/A	Disc.
5. Noise.					
a. Would the proposed project result in generation of noise levels in excess of those currently existing in the area?			X		X

	Yes	Maybe	No	N/A	Disc.
b. Would existing noise levels impact the proposed use?	___	___	X	___	X
c. Are Title 25 Noise Insulation Standards applicable?	___	___	X	___	X

Noise levels in the area as a result of project operation would not be expected to exceed currently existing levels. Traffic generated by the project during any hour of the day would cause traffic noise to increase by less than 1 dBA. A 1 dBA increase in environmental noise is undetectable by the untrained human ear. This conclusion is based on projected traffic noise impacts in the Five Fremont Center EIR (EE 80.268, p. 119) and the 101 California Street EIR (78.27, p. 105). Both of these buildings are situated on streets with environmental noise levels of 70 dBA, the same level indicated on Main Street by the Environmental Protection Element of the San Francisco Comprehensive Plan, 1974. Five Fremont Center and 101 California Street contain four and five times, respectively, the floor area of the proposed project. In the other projects cited, project-generated traffic was found to increase environmental noise by less than 1 dBA. The impact of the proposed project would probably be less. A 22-unit subsurface parking area is proposed with access on Main Street. The project plan also includes two ground-level loading spaces. These facilities would generate additional traffic, but increased noise levels would be generally inaudible due to existing noise levels on Main Street.

Noise due to mechancial equipment is regulated by the San Francisco Noise Ordinance, Section 2909, "Fixed Source Noise Levels" (San Francisco Municipal Code, Part II, Chapter VIII Section 1, Article 29, 1972). In the C-3-O District the ordinance restricts equipment noise levels at the property line to 70 dBA between 7 a.m. and 10 p.m. and 60 dBA between 10 p.m. and 7 a.m. During lulls in traffic, mechancial equipment noise levels of 70 dBA would tend to dominate the site noise environment. If equipment noise levels were restricted to the nighttime limit of 60 dBA, they would not be audible at any time within the sound-level context of the project.

The Environmental Protection Element of the San Francisco Comprehensive Plan indicates an existing day-night average noise level (Ldn) of 70 dBA for Main Street. For office use the guidelines recommend no special noise control measures in an exterior noise environment up to an Ldn of 70 dBA. As the

exterior noise levels at the site are estimated to be 70 dBA, no major analysis of noise reduction is required by the guidelines, but some noise insulation features would be incorporated into the building design.

The California Administrative Code Title 25 Noise Insulation Standards apply to all residential structures. As the proposed structure does not include housing, Title 25 Noise Standards would not be applicable.

Throughout the 20-month construction period, trucks would be visiting the site, initially hauling away dirt and debris and then bringing materials. These activities would temporarily increase noise levels in the surrounding area.

During construction all powered equipment, other than impact tools, would have to meet the San Francisco Noise Ordinance requirement of 80 dBA at 100 feet. If a second piece of equipment is used concurrently with the first it would add about 3 dBA, making the level about 83 dBA at 100 feet. During the six weeks of excavation noise levels would reach up to 76 dBA in the office building now under construction at 150 Spear Street. This noise level would interfere with speech and concentration and marginally restrict telephone use. Significant noise impacts could result during driving of foundation piles of the building. Noise levels as high as 88 dBA could be expected in the 150 Spear Street office building each time the driver strikes the pile. During these intermittent noise intrusions, only minimal communication would be possible. Shouting would be required at two to three feet and the use of telephones would be curtailed.

The Department of Public Works requires "state of the art" noise control devices during construction on all projects. However, all projects exceed the Noise Ordinance standard of 80 dBA at 100 feet during piledriving. The lowest dBA sound achieved is in the high 80s at the 100-foot range. Actual noise emissions are dependent in part upon soil characteristics and the type of piles. Impact tools such as pile drivers are exempted from the basic Noise Ordinance standards provided noise attenuation measures are approved by the Director of Public Works. The Department also analyzes the impacts of piledriving for every project and frequently requires staggered hours for piledriving. The most frequent requirement in commercial areas is from 1 p.m.

to 9 p.m. All measures imposed by the Department are negotiable and are subject to revision during construction should circumstances require new action. (Ray McDonald, Chief Building Inspector, Bureau of Building Inspection, Department of Public Works, July 6, 1981, telephone communication.)

	Yes	Maybe	No	N/A	Disc.
6. Air Quality/Climate. Would the proposed project result in:					
a. Violation of any ambient air quality standard or contribution to an existing air quality violation?	X				X
b. Exposure of sensitive receptors to air pollutants?			X		X
c. Creation of objectionable odors?			X		
d. Burning of any materials including brush, trees, or construction materials?			X		
e. Alteration of wind, moisture, or temperature (including sun shading effects), or any change in climate, either locally or regionally?		X			X

Demolition, grading, and construction activities would affect local air quality for approximately 20 months. Grading and other construction activities would cause a temporary increase in particulate and hydrocarbon emissions. These emissions would be carried by prevailing winds and probably would not cause emissions standards to be violated. Without mitigation, construction-generated dust might cause exceedances of the particulate standard in the immediate project area. Except to persons with respiratory problems, large-size construction particulates are more a nuisance than a hazard, and settle out of the atmosphere rapidly with increasing distance from the source. This is in contrast to gaseous pollutants and to small-size particulates from combustion. Diesel powered construction equipment would emit, in decreasing order by weight, nitrogen oxides, carbon monoxide, sulfur oxides, hydrocarbons, and particulates. This would increase local concentrations temporarily but would not be expected to increase the frequency of violations of air quality standards.

Project-related traffic would add to local and regional accumulations of CO, hydrocarbons, and nitrogen oxides (the latter two being precursors of ozone), particulates and sulfur oxides during adverse meteorological conditions, such as inversions (U.S. EPA, 1977, Compilation of Air Pollutant Emission Factors, AP-42). Ozone is a regional problem, and CO and particulate are local problems (ABAG, BAAQMD and MTC, Jan. 1979, 1979 Bay Area Air Quality Plan, San Francisco Bay Area, Environmental Management Plan).

There are no significant sensitive receptors, such as hospitals, within a mile of the area. The only sensitive receptors in the area would be individuals with respiratory problems passing through the area or working in the vicinity.

The project site is in an area downwind of the highrise corridor along Market Street. This area has been found in previous wind tunnel studies (such as the EIR on the Federal Reserve Bank of San Francisco, EE 78.207) to be partially sheltered by these highrises. Additionally, the site is directly downwind of several existing and proposed highrises near the Main and Mission Street intersection. The site would be sheltered from westerly winds by the Bechtel Building, the PG&E building and the Pacific Gateway building now under construction. These buildings are all taller than the proposed 135 Main Street Building. The site is protected from northwesterly winds by the Federal Reserve Building now under construction and by highrises across Market Street. The site, therefore, is sheltered from winds from the prevailing west and northwest directions.

The project design is one that would normally generate wind accelerations at ground level if the building were freestanding. The shelter provided by existing structures and future structures on either side reduces the potential for this effect. However, the more or less continuous facade on Main Street which would result from the construction of this building and the proposed buildings on either side, could result in an accelerated wind speed. The entry-level plaza would have generally calm winds.

The cumulative wind effects and the shadow effects of the project will be discussed in the EIR.

7. Utilities and Public Services. Would the proposed project:	Yes	Maybe	No	N/A	Disc.
a. Have an effect upon, or result in a need for new or altered, governmental services in any of the following?					
fire protection			X		X
police protection			X		X
schools			X		X
parks or other recreational facilities			X		X
maintenance of public facilities			X		
power or natural gas			X		X
communications systems			X		X
water		X			X
sewer/storm water drainage			X		X
solid waste collection and disposal			X		X

The project would incorporate more extensive fire protection measures than many existing buildings because of more stringent code standards now in effect. The project would increase the building area and the number of persons using the site. Expansion of the water main beneath Main Street from Mission Street may be necessary to provide adequate fire service waterflows because the present six-inch main installed in 1868 may prove to be inadequate to serve this project and others nearby which are being planned or are under construction. This is under study by the Fire Department. (Chief Joseph Sullivan, Division of Planning and Research, letter communication, April 13, 1981.) Cost of the expansion would be borne by the properties directly benefitting. If needed only for the 135 Main Street project, the main would extend from Mission Street southward on Main Street to the project site a distance about 150 feet. One traffic lane on Main Street would be blocked during construction for a period of about four weeks.

The project would increase population on the site, thus increasing the potential for crime. The project site is located within the Southern Police District with coverage from the Southern Station at 850 Bryant Street. The area is patrolled 24 hours a day by radio-dispatched cars. There are no foot

beats in the project area. The project would not require additional personnel or equipment for the police department. (Sgt. Paul Libert, Planning and Research Division, telephone communication, April 7, 1981.) Appropriate mitigation measures, such as alarms, adequate lighting at entryways, security personnel, and closed-circuit camera systems, would reduce the effects of the project on the police department.

The project would have no school-age children. No impact on area schools would result from the project.

The project would generate a demand for urbanized recreational facilities, such as plazas and city parks with benches. Such facilities are now available and others are planned on The Embarcadero two blocks east of the project. The project would provide an on-site garden at the rear of the site and an entry courtyard. If connecting links are provided by adjacent property owners, the rear garden could become a part of a mid-block walkway and park.

The project would have no direct effect on the maintenance of public facilities.

The project would result in a net increase in consumption of energy. The project would conform to California energy standards for nonresidential buildings (Title 24, California Administrative Code). The project would require a below-grade transformer which would be located in the basement area. There would be no gas or electricity supply problems. (Alfred A. Williams, Industrial Power Engineer, Pacific Gas and Electric Company, telephone communication, April 8, 1981.)

The project would result in increased use of communication systems. No supply or capacity problems exist. (Jack McGovern, Engineering Services Department, Pacific Telephone, telephone communication, April 8, 1981.)

The project would generate a demand for about 26,000 gallons of water per day. There would be no supply problems. As mentioned above, the six-inch main beneath Main Street, installed in 1868, may need to be expanded to eight inches to meet fire service demand. (Harlow Swain, Senior District Water Serviceman, Engineering Department, San Francisco Water Department, telephone communication, April 7, 1981.)

The amount of sewage and storm drainage generated by the project would be approximately the same as the water used, as described above. The 4-foot by 6-foot combined sewer underneath Main Street serving the site would be adequate to handle increased sewer flows. (Nathan Lee, Engineering Associate II, Department of Public Works Clean Water Program, telephone communication, April 7, 1981.)

The project would generate a net increase of about one ton per day of solid waste. Collection would not present a problem and would probably occur daily, as at present. Disposal effects would depend on the eventual selection of a disposal method and/or site for San Francisco's solid wastes. (Fiore Garbarino, Office Manager, Golden Gate Disposal Company, telephone communication, April 8, 1981.)

	Yes	Maybe	No	N/A	Disc.
8. Biology.					
a. Would there be a reduction in plant and/or animal habitat or interference with the movement of migratory fish or wildlife species?	___	_____	X	___	_____
b. Would the project affect the existence or habitat of any rare, endangered or unique species located on or near the site?	___	_____	X	___	_____
c. Would the project require removal of mature scenic trees?	___	_____	X	___	_____

	Yes	Maybe	No	N/A	Disc.
9. Land. (topography, soils, geology) Would the proposed project result in or be subject to:					
a. Potentially hazardous geologic or soils conditions on or immediately adjoining the site? (slides, subsidence, erosion, and liquefaction)	X	_____	___	___	X
b. Grading? (consider height, steepness and visibility of proposed slopes; consider effect of grading on trees and ridge tops)	___	_____	X	___	X
c. Generation of substantial spoils during site preparation, grading, dredging or fill?	___	X	___	___	X

The project site is situated on Bay fill which has subsided approximately nine feet since the 1850's when it was first placed. Most of the expected settlement has already taken place. Old bay clay is found between elevations -100 and -200 feet (San Francisco Datum) in the project vicinity (Final EIR, Federal Reserve Bank, pages 49-50, EE 78.207). A site-specific analysis would be made before construction plans are finally developed to determine the depths and design of piles and appropriate interim shoring methods. The entire site has a basement level graded to the property lines. Deepening the basement level by approximately six feet would require the removal of about 5,000 cubic yards of material. Demolition of the existing above-grade structures would result in the removal of used brick, which may be salvaged, and concrete from the site. Such spoils would be transported by truck to a contractor's yard and to a disposal site.

10. Water. Would the proposed project result in:	Yes	Maybe	No	N/A	Disc.
a. Reduction in the quality of surface water?			X		
b. Change in runoff or alteration to drainage patterns?			X		
c. Change in water use?	X				X
d. Change in quality of public water supply or in quality or quantity (dewatering) of ground water?			X		

Water use would be approximately 26,000 gallons per day. Dewatering may be required during construction. This will be determined by soils tests.

11. Energy/Natural Resources. Would the proposed project result in:	Yes	Maybe	No	N/A	Disc.
a. Any change in consumption of energy?	X				X
b. Substantial increase in demand on existing energy sources?		X			X
c. An effect on the potential use, extraction, conservation or depletion of a natural resource?		X			X

There would be an increase in energy consumption on the site as a result of the project because of an increase in the total square footage of structure to be served. As a detailed building design has not yet been developed, the extent of energy consumption and the types of conservation measures have not been identified.

The project would conform to energy requirements of Title 24 of the California Administrative Code so that energy use per square foot of floor area would be less than in the buildings on the site at present. There would be an increase in fuel consumption related to travel to and from the site.

There would be an increase in peak-hour electrical demand resulting from elevator use in addition to the peak-hour demand characteristics of other uses in the structure. Other aspects of electrical and natural gas demand characteristics cannot be identified until more specific building designs are developed.

No existing active solar energy collection installations would be affected by the project as none are located in the immediate area north or east of the site. None is proposed for the project because of cost infeasibility. Effects of shadows from the project will be analyzed in an Environmental Impact Report. No other natural energy resources would be directly affected.

The project is not expected to have a significant effect on the extraction, conservation, or depletion of a natural resource.

	Yes	Maybe	No	N/A	Disc.
12. Hazards. Would the proposed project result in:					
a. Increased risk of explosion or release of hazardous substances (e.g., oil, pesticides, chemicals or radiation), in the event of an accident, or cause other dangers to public health and safety?	___	_____	X	___	_____
b. Creation of or exposure to a potential health hazard.	___	_____	X	___	_____
c. Possible interference with an emergency response plan or emergency evacuation plan?	___	_____	X	___	_____

13. Cultural. Would the proposed project:	Yes	Maybe	No	N/A	Disc.
a. Include or affect a historic site, structure, or building?	___	_____	X	___	_____
b. Include or affect a known archaeological resource or an area of archaeological resource potential?	___	_____	X	___	X
c. Cause a physical change affecting unique ethnic or cultural values?	___	_____	X	___	_____

No known buried ships or other archaeological resources are on the site (Map: Gold Rush Vessels Beached, Scuttled and Broked Up, 1963, San Francisco Maritime Museum). The site was a part of Yerba Buena Cove before being filled in the early 1850's. It is possible that marine relics or artifacts may be found during site excavation. Because the site is completely built, a subsurface investigation for archaeologic artifacts has not been performed. (See page 19 for a mitigation measure to be applied in the event of a find on the site.) The buildings at 115 Main Street and 135 Main Street were not rated in the architectural surveys by the Department of City Planning and by the Foundation for San Francisco's Architectural Heritage. They are not included on the official City list of Architecturally and/or Historically Significant Buildings adopted by the City Planning Commission on May 29, 1980.

C. MITIGATION MEASURES:	Yes	No	Disc.
Are mitigation measures included in the project?	X	___	X
Are other mitigation measures available?	X	___	_____

A number of mitigation measures have been included in the project as designed to date. They are described below.

INCLUDED IN THE PROJECT

1. The project would include a covered 3-story-high entrance courtyard open to Main Street and a glass-covered, enclosed, wind-free rear garden area which could be a link in a midblock pedestrian way if adjoining projects provide connecting links. Both areas would be landscaped and would provide passive recreational areas for project occupants and the public.

2. The project would represent a transition in scale between 43-, 34-, and 33-story buildings to the north and northwest and 18-story and lower buildings to the southeast, in compliance with the height envelope intended by the Urban Design Plan and the implementing height limits established by the City Planning Code. The upper floors would be set back on the east side of the building to provide visual interest to the building profile.

3. The sponsor would work to assist in the resolution of the housing issue generated by the project. (Further discussion will be provided in subsequent environmental evaluation.)

4. The project would provide internal security measures such as security guards, well-lighted entries, and alarm systems, to minimize the need for City police services.

5. The project contractor would be required by the contract to comply with all requirements of the San Francisco Noise Ordinance, including limiting noise emissions from powered construction equipment to 80 dBA at a distance of 100 feet. The project contractor would muffle and shield intakes and exhausts, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible.

6. The project sponsor and project contractor would meet with the Bureau of Engineering to determine necessary and feasible measures to reduce noise during the approximate six week period that piledriving would occur, including predrilling holes for piles to the maximum feasible distance to minimize piledriving activity.

7. The project contractor would limit piledriving to those hours resulting in the least disturbance to neighboring uses in accordance with requirements to be established by the Department of Public Works.

8. During excavation, unpaved demolition and construction areas would be wetted to hold down dust; if this were done at least twice a day with complete coverage, particulate emissions (dust) would be reduced about 50 percent. Main Street would be swept by the project contractor to maintain it clear of spilled materials and dust and to minimize the hazard of siltation in the storm drain system serving the site.

9. The general contractor would maintain and operate construction equipment so as to minimize exhaust emissions.

10. The general contractor would use water-based or latex paints on all interior drywalls painted, rather than oil-based paints which emit hydrocarbons while drying. This would reduce hydrocarbons from drying paint by about 60 percent.

11. The project would incorporate low-flow faucet and toilet fixtures to reduce water consumption and wastewater.

12. The building would be equipped with a trash compactor to reduce the volume of solid waste requiring storage and transport.

13. Wherever possible, office suites would be equipped with individualized light switches, and fluorescent lights to conserve electric energy.

14. The heating, ventilating and air conditioning (HVAC) system would be equipped with a time-clock system and an economizer cycle to use outside air for cooling, as feasible.

15. Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist to help the Office of Environmental Review determined the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

16. A detailed foundation and structural design study would be conducted for the building by a licensed structural engineer and a geotechnical consultant. The project sponsor would follow the recommendations of these studies during the final design and construction of the project.

D. ALTERNATIVES:

	Yes	No	Disc.
Were other alternatives considered:	X		

Other building configurations were considered before the proposed plan and design were designated for the project. A building extending the full 137.5-foot width of the site was considered and was described as the project in the Draft Initial Study. At the request of the Department of City Planning this design was replaced by the project as described herein, with a 12.5-foot sideyard to harmonize with the increased side setback requested by the Department of City Planning for the proposed project just south of the project. Greater site coverage was rejected for it precluded development of a garden-like pedestrian area at the rear of the ground level. Lesser coverage and additional floors, resulting in a taller and slimmer profile, were considered but rejected because such plans resulted in individual floors being smaller than the general market demands and because of a loss of office space due to an expanded internal service core. On-site housing was considered and rejected because the site was considered inappropriate for housing as the site vicinity has no residential services or amenities and the developer was not aware of any plans for the provision of such services at the time of project planning. (The Redevelopment Plan for Rincon Point-South Beach designates the southern part of the Rincon Annex Post Office block for housing but there are no firm plans for implementation at this time. This site is still used by the Postal Service.) Expensive excavation would be necessary for the residential parking required by the City Planning Code, the proximity of the freeway off-ramp was considered inimical to a residential environment, and the site was considered to be too small for a successfully compatible office and housing combination. These alternatives as well as ones conforming with the requirements recommended in Guiding Downtown Development, May 1981, published by the Department of City, will be discussed in the EIR.

E. MANDATORY FINDINGS OF SIGNIFICANCE:

	Yes	No	Disc.
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory?	___	X	___
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	___	X	___
3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects?)	X	___	___
4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	___	X	___
5. Is there a serious public controversy concerning the possible environmental effect of the project?	___	X	___